THE OIL WEEKLY

ENGINEERING « NEWS » STATISTICS

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The Oil Man's Calendar

APR. 7–11	American Chemical Society, St. Louis.
15–17	Southwest Gas Measurement Short Course, University of Oklahoma, Norman.
16–18	Western Petroleum Refiners Association, Hot Springs, Ark.
17–18	American Petroleum Institute, Division of Production, Eastern District, Pittsburgh.
23–25	Petroleum Industry Electrical Association, Tulsa.
23–25	Natural Gasoline Association of America, Dallas.
24–25	National Petroleum Association, Semi-Annual Meeting, Cleveland.
MAY 2– 3	Petroleum and Natural Gas Conference, State College, Pa.
5– 8	American Gas Association, Natural Gas Section, Dallas.
10–11	West Texas Geological Society, Spring Field Trip, Fort Worth.
19–22	American Petroleum Institute, Mid-Year Meeting, Tulsa.
26–29	National Association of Purchasing Agents, Chicago.
29–31	National Oil Scouts & Landmen's Association, Dallas.
NOV. 2– 7	American Petroleum Institute, Annual Meeting, San Francisco.

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THE OIL WEEKLY

APRIL 7, 1941

VOLUME 101 NUMBER 5

The Changing Panorama

THE partial restoration in crude-oil prices, originating in California last week and later taking effect in the Mid-Continent and Gulf Coast areas, was well founded, and the only complaint which can be registered on the new price is that possibly it is not high enough.

When, 29 months ago, crude-oil prices were reduced because of over-production, Illinois had just started her flood of oil into the market and it was not difficult to see its effect. That flood has since been greatly reduced, and if there were grounds for the reduction then, certainly there are grounds for restoration of the price now.

In addition to the foregoing, producing costs have been going up—and it appears likely that many of the factors which enter into oil producing will become more expensive during the next several months.

As a matter of fact, THE OIL WEEKLY had prepared an editorial last week, which was not only in type, but had been placed on the press, when the price increase was announced by Humble Oil & Refining Company. The news of the price increase simply took the place of the editorial saying that an increase was advisable.

Just No Demand for It . . .

If federal control of the oil industry is not dead, from the standpoint of Congressional action, then federal control is indeed a hydra-headed monster!

Last week's testimony on the Cole bill before the congressional committee certainly should have been an epitaph to the efforts to throw the industry into federal control, because the witnesses who were called were unanimous in the opinion that it is not needed.

One of the most important witnesses not only testified that it was not needed, but that it could easily cause a bottle-neck in the oil industry where none exists now.

The Army, the Navy, the Office of Production Management, the Interstate Oil Compact representatives, representing the public and the industry, said that there is enough oil—that federal control would not add anything to the industry's benefits from the operation of the oil industry.

In the face of such testimony it would be difficult to picture an emergency requiring federal control.

Do Not Relax . . .

Despite the increased possibilities of Congress not reacting favorably to the proposal that federal control of oil should be enacted, the industry should not relax in continuously expressing opposition to federal regulation at every opportunity. By no means is the federal control question settled, it will reoccur again—probably in the not far distant future.

The industry should take advantage of the possible lull that may occur in the federal-control drive. During this interval it should warn the public of the dangers of federal control, as well as the ability of the industry to fulfill all military requirements without interrupting civilian consumption. Something that can be done in the United States—the only nation where oil has been developed on a free enterprise basis—but which cannot be done anywhere else.

Public Education . . .

One of the greatest weaknesses in the successful accomplishment of conservation has been the lack of public understanding. Those unfamiliar with the industry usually do not realize the benefits of higher ultimate recoveries, etc., that are accomplished by slower withdrawal rates.

Therefore, it is encouraging to read the *Daily Banner News* of Magnolia, Arkansas, of March 18, which contains several articles on oil by Glen G. Martel, postmaster at Magnolia. An oil man could not help but be amazed at the knowledge he shows of proration problems and the resulting benefits to the public.

Martel states that through conservation practices the Magnolia field alone will produce 110,000,000 barrels more than estimated under open flow. This means, he continues, $110,000,000 worth of additional wealth to operators and royalty owners, much to the state as a basis for tax returns, and to the public in general constitutes a basis for more abundant living.

Important Decision . . .

Ruling by a federal district judge that ordinary oil-field workers are engaged in production of a commodity used in interstate commerce, even if working for a small independent operator who sells to a major company before the oil is moved out of the state in which it originates, means that the wages-and-hour law applies to all oil-field labor.

This is a far-reaching decision, as it definitely places roustabouts, pumpers and other lease help as being subject to the wages-and-hour act. Because of uncertain hours that many of these men must work, due to the fact that many times they cannot stop in the middle of a pulling or cleaning-out job, it is going to be difficult to keep everyone working on a straight 40-hour week. Thus, considerable overtime pay is to be necessary on many occasions.

Facts and Floods . . .

L. M. Arnold, Geologic Standards: "Forty percent of the total production in the Nowata-Rogers County area of Oklahoma comes from 10 percent of prospective water-flood acreage." W. S. Walls,

Phillips Petroleum Company: "This flood production remains 2 percent of the state's total." Clark F. Barb, Professor of Petroleum Engineering, Colorado School of Mines: "Sufficient water is not available for floods in many Rocky Mountain areas." L. L. McWilliams, Phillips Petroleum Company: ". . . it is doubtful if widespread repressuring (in southeastern Kansas) could have been effected without unitization." And then: "When sand is too tight for gas or air, water can be applied." . . . "With porosity so great, the oil was left in the sand and the project failed." A comment . . . "Some of the landowners seem to think flooding is a gold mine. Instead, it is a hard and difficult task with financial rewards too often limited to a minimum and with the risk too great to allow premium payments for average leases."

Farm Color . . .

Purple gasoline, for exclusive use of farmers, and colored to distinguish it from the higher taxed "private car" variety, was put on sale recently at refineries in Calgary and Turner Valley, Alberta, and at bulk stations in some country points. Dyeing equipment was installed by provincial government representatives at refineries, and the new product is being retailed at 13 cents a gallon, including 1 cent provincial tax. It may only be sold as fuel for tractors and farm machinery actually used for agricultural purposes.

California Should Join . . .

With immediate pressure apparently relieved by recent developments at Washington, in so far as federal control of the oil industry is concerned, Californians will do well to remember that successful military strategy dictates that when you have the enemy on the run is the time to push on for complete victory. There should be no lessening of the action sponsored by the Oil Producers Agency of California toward securing an enabling act which would bring California into the Interstate Oil Compact. This move is based on sound logic and should receive wholehearted support of the industry even though at the moment federal control appears to have been removed from the realm of the immediate future.

California, under voluntary curtailment, has done an excellent job in the past. It has contributed to the oil industry some of its best conservation rules because California producers have had the benefit of constructive engineering advice for many years.

Despite all these things which may be said to the credit of the oil industry in California, it is also true that the very fact that an oil state as important as California has not been a part of the Interstate Oil Compact, has weakened the force of the compact. California has nothing to lose by entering the compact but it does have something of material value to contribute to the nation-wide operation of the oil industry.

If all oil-producing states were members of the compact and adhered to the general compact rules, one of the last remaining arguments in favor of federal control would be removed.

California will have the ideal arrangement as a member of the Interstate Oil Compact, thereby contributing to the unanimity of state's cooperation without surrendering the right to control itself by voluntary action.

Apparently some of the citizens of Illinois have realized the advantages of conservative oil development, even if the state has not enacted any conservation measure. Taking a lesson from the costly close-space drilling at nearby Keensburg, residents of Mt. Carmel have passed a city ordinance which permits only one well to each producing horizon in each city block. Unlike the townlot play at Keensburg, where tests were drilled along side each other on any and all available lots, wells at Mt. Carmel will therefore be on 3½- to 4-acre spacing. While this is considered close spacing under modern conceptions, it nevertheless is an improvement over Keensburg is crowding.

Gleanings . . .

Twenty-three new tankers, totaling 230,755 gross tons, are under construction for eight United States oil companies • • • Motor boat manufacturers are adding oil-burning models to their lines • • • Approximately half of college graduates in geology enter the petroleum field each year. In 1938, a total of 230 new college graduates in geology became associated with the petroleum industry, in 1939 there were 297, and in 1940 there were 255 • • • A. I. Levorsen, head of A. A. P. G. Research Committee: "We who are geologists are the only group who have any business talking about the possible future discoverable reserve, whether it is much or little, where it may occur, or how it will be discovered." • • • Henry Ford again has admitted that his company is experimenting with a "flivver" plane • • • Last summer, in urging that oil companies look ahead on their requirements and place orders while oil equipment plants still had machinists and materials, The Oil Weekly predicted that a tightness on some supplies would be felt by May. It is already being felt in some quarters • • • An oil man, Ed Landreth of Fort Worth, is to be the recipient of the seventeenth annual "Golden Deed" award of the Exchange Club of that city • • • There is to be a great demand for engineers of every type. It is understood that the United States defense program will be needing 40,000 engineers by June, and that the colleges will be graduating but approximately 12,000 • • • A bill presented to the Montana state legislature (since adjourned) provided that all gasoline dealers in a given town quote different prices—and that two or more identical prices would be evidence of collusion, but such dealers are not to be required to use a different size shoe on each foot.

Increased Price Points Toward Stabilization

By L. J. LOGAN, Associate Editor

"HOW are crude prices determined?" questioned the member of the Texas Railroad Commission, Colonel Ernest O. Thompson.

Intently interested, the hundreds of oil men assembled in the House of Representatives chamber in the Texas capitol awaited the reply of Harry C. Wiess, president of Humble Oil & Refining Company, largest crude oil purchaser in the state.

The witness searched his mind for an answer.

The occasion was the hearing of the Texas Railroad Commission 19 months ago, after crude-price reductions had precipitated half-month shutdowns of Mid-Continent oil fields—reductions which were later rescinded.

"An answer to your question," finally stated the witness, "would require an economic treatise."

The meaning was that many factors were involved, and that no simple answer was possible.

But further questioning finally drew from the oil company executive the explanation that the immediate cause of the downward revision of that time was extensive buying of crude by competitors at prices less than established postings.

No dramatic situation, like that just mentioned, has occurred following the increases in crude prices of the Mid-Continent which were initiated by Humble Oil & Refining Company effective March 29. A purchaser is not called upon to explain a crude raise.

Nevertheless, this particular increase has caused much close examination of the crude-price structure, for the revision was somewhat of a surprise, and after it had been made, there was some speculation as to the extent that war conditions might have been responsible.

As in the case of the mentioned crude-price reduction, however, a full explanation of the recent increase by means of a brief, simple statement is not possible, although it is fairly apparent that the immediate cause was increased desire of purchasing companies to retain old well connections and to obtain new connections. The purchasers evidently anticipated increased demand for the derivatives of crude at prices that would justify paying better prices for their raw material; and in order to assure dependable supplies of sufficient crude, felt it advisable to advance postings by the moderate amount indicated as economically sound and possible. Certainly, companies which were confronted with the choice of meeting the higher prices or refusing to meet them and which finally decided to do so, must have reached the conclusion that they would be able to operate profitably in the face of higher costs for crude.

On its face, therefore, the recent crude-price advance was but a manifestation of the free functioning of the competitive system, in which prices are determined by the relationship of supply and demand.

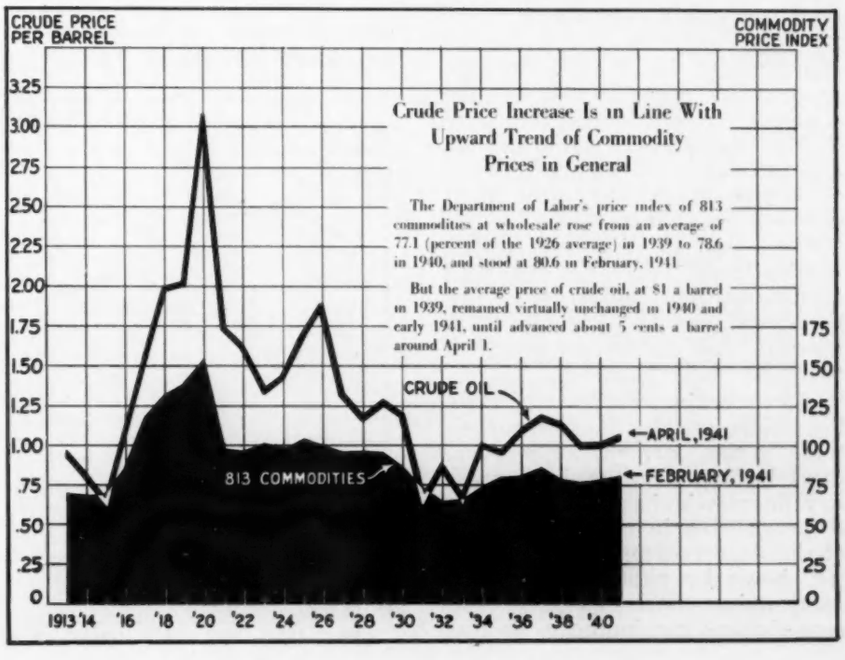
It is that relationship, on which the new prices are based, and which apparently has undergone a substantial change, that might require a treatise for full explanation.

However, within shorter space, at least some of the significant elements of supply and demand may be pointed out to help explain fundamentally why crude prices have advanced—and why they possibly may advance further before this year is over.

(The increase averaged between 6 and 7 cents a barrel in Texas, was 5 cents in Oklahoma and Kansas, and was of similar proportions in other areas of the Mid-Continent and the Middle West. And in view of the moderate raises involved, there has been considerable speculation as to the possibility that a further advance may be effected in late spring or summer.)

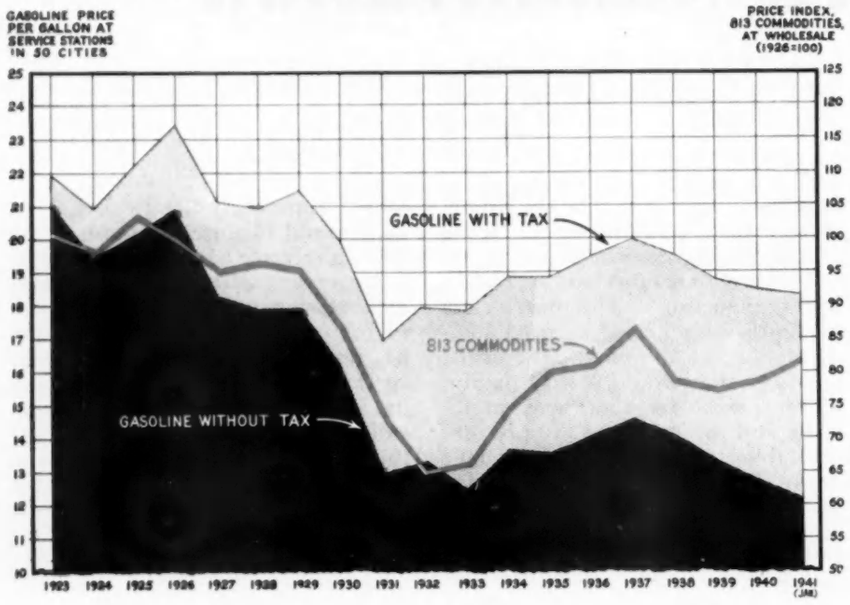
Gasoline Improved

Probably the most important single factor involved in the price readjustment was the definitely improved market for gasoline. Gasoline prices grew progressively weaker in 1940 until they sank close to all-time low levels, as stor-


CRUDE PRICE PER BARREL
COMMODITY PRICE INDEX
Crude Price Increase Is in Line With Upward Trend of Commodity Prices in General
The Department of Labor's price index of 813 commodities at wholesale rose from an average of 77.1 (percent of the 1926 average) in 1939 to 78.6 in 1940, and stood at 80.6 in February, 1941.
But the average price of crude oil, at $1 a barrel in 1939, remained virtually unchanged in 1940 and early 1941, until advanced about 5 cents a barrel around April 1.
CRUDE OIL
813 COMMODITIES
APRIL, 1941
FEBRUARY, 1941
3.25
3.00
2.75
2.50
2.25
2.00
1.75
1.50
1.25
1.00
.75
.50
.25
0
175
150
125
100
75
50
25
0
1913 '14 '16 '18 '20 '22 '24 '26 '28 '30 '32 '34 '36 '38 '40

Current Improvement of Gasoline Market, Which Makes Higher Crude Postings Possible, Is Overdue; for Commodity Prices in General Have Been Increasing Since August of Last Year

Chart shows service station prices of gasoline, with and without taxes, and the Department of Labor's price index of 813 commodities at wholesale.


GASOLINE PRICE PER GALLON AT SERVICE STATIONS IN 50 CITIES
PRICE INDEX, 813 COMMODITIES, AT WHOLESALE (1926=100)
GASOLINE WITH TAX
813 COMMODITIES
GASOLINE WITHOUT TAX
1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 (JAN)

age tanks bulged with stocks far out of line with current and prospective consumption of the product. But through careful holding down of refinery yields of gasoline during the fall and winter, and through benefit of increased demand as the defense program expanded consumption, the gasoline stocks gradually have come into much more favorable ratio to prevailing and promised demand. Expressed in terms of days' supply at the current rates of consumption, gasoline stocks are decidedly more moderate than heretofore, as shown by one of the accompanying charts; and few owners of the product are eager to sell. On the contrary, buyers are beginning to find it necessary to shop around, and to offer inducements in terms of better prices, to meet their growing requirements. So far, the bidding up of gasoline prices, wholesale and retail, has advanced quotations only moderately. But the trend appears to be definitely upward, and further increases of prices are to be expected.

Moreover, improvement of gasoline prices justifies no fair opposition. On the contrary, the improvement is long overdue, in fairness to refiners, who have not been able to break even in making gasoline at the depressed prevailing prices. As shown by another of the accompanying charts, gasoline until recently was continuing to decline in price, in the face of increases in commodity prices in general. In turning upward, the gasoline prices are only belatedly falling in line with most other commodity prices.

Similarly, some of the other petroleum products have been unfavorably priced but now are improving, among them being especially the lubricants. Exports of lubricants diminished sharply in 1940, and prices declined. Under the influence of the defense program, however, the industrial component of domestic demand has expanded materially, while automotive use also has further grown, with the result that the gain in domestic consumption has almost compensated for the loss of export business. And with use both in factories and automobiles likely to expand materially further, strong markets and further improving prices of lube oils are in prospect.

Heavy fuel oils have been in strong demand and will continue so, with the important users, the railroads, shipping lines, factories, mills, mines, smelters, and electric power plants readily absorbing all available supplies, imported as well as domestic. Continued favorable prices consequently are assured.

Light fuel oils have become increasingly important as a source of revenue for oil companies, and although stocks are comparatively large, following a relatively mild winter, the outlook for demand and for prices next fall and winter is favorable, considering the fact that normal consumption continues to grow, with new oil burners being installed in large numbers.

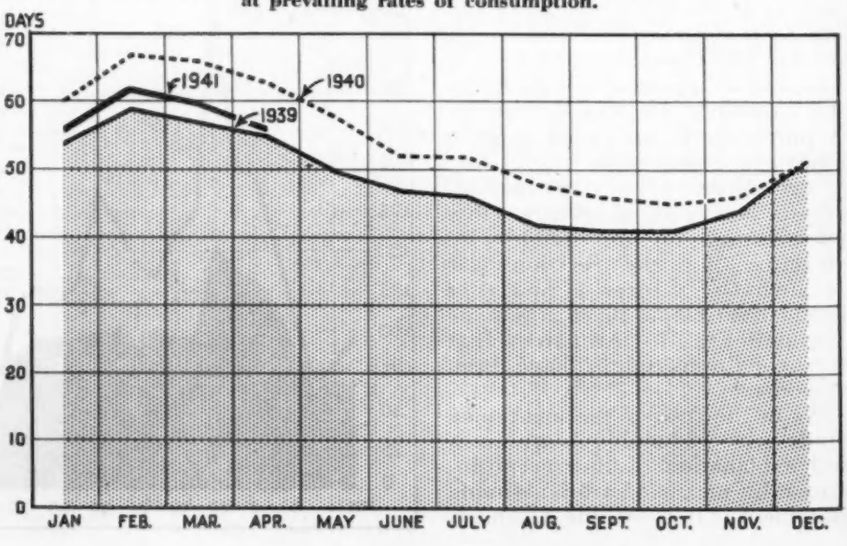
The current firmness of the crude market is based, therefore, on favorable situations of not only gasoline but also most of the other major products.

And just as the improvement in the gasoline market has seemed overdue in the light of gains for other commodity prices, the recent general advance of crude-oil prices also has appeared tardy in relation

[*Continued on page 62*]

Strengthening of Gasoline Market Reflects Improvement of Inventory Situation, Fewer Days' Supply Being Now on Hand

Chart shows days' supply of gasoline in storage at beginning of each month, at prevailing rates of consumption.



Crown and Traveling Block Design Meets Deep Hole Need

By ELTON STERRETT, Equipment Editor

OVERALL SIZE, unit weight and lubrication limitations pyramid severe restrictions on the design and construction of crown and traveling blocks in their race to keep ahead of the constantly augmented demands of deeper and faster drilling, Not only are the total loads stepped up to require capacities in excess of 350 tons, but in addition the operating speeds are increased to a point where earlier design formulas are no longer adequate.

Where it formerly was customary to rate bearing loads under a standard speed of 100 rpm, permissible main drum rotation in the modern drawworks now calls for rope travel over the fast-line sheave as high as 3500 fpm, which, on a sheave with a 42-inch nominal diameter, requires a theoretical maximum of 355 rpm, or more than three and one half times the former standard.

Since 100 rpm involves a 50 percent reduction in load factor over that permissible at 10 rpm, and further increase in speed to 350 rpm cuts the factor to 35 percent, it is evident that the present unit must incorporate an additional 50 percent increase in capacity to compensate for the speed factor alone, to which must be added the impost of higher unit loads and longer running periods under most severe deep drilling conditions.

Bearing wear not only finds the unit loading boosted, but also meets the condition where the periods of high-speed operation are more than doubled in the handling of long strings into and out of holes drilling beyond the 10,000-foot mark. Even with the highest derricks now being used and the employment of longer joints of drill pipe, the number of traveling-block cycles to handle an entire round trip of the drilling string is double that met under average conditions three or four years ago.

Crown blocks must conform in maximum overall dimensions to the limitations set by A. P. I. specifications for derrick water-table openings, through which the block assembly or its largest component part must be maneuvered during rigging up. If frames are unitized through welding, working space within the water-table opening becomes an even greater limiting factor, as disassembly is then restricted to removal of the sheave unit only.

If the crown block assembly be fabricated as a unit, or even in two components consisting of base and sheave assemblies, the weight to be hoisted to position at derrick top requires additional capacity in lifting aids. Ginpole load limits, as provided by A. P. I. specifications, provide ample safety factor for normal lifting of any existing crown-block components, with the successful landing of crown-block equipment being dependent upon adequate tackle plus the safe employment of manual power in restricted quarters.

Composite Equipment Review—IV

Crown and traveling blocks, rigidly held to fixed overall size by existing derrick conditions, meet deep drilling demands by using high-tensile materials, ingenious sheave and bearing arrangement, and with stepped-up units to distribute concentrated bearing and running loads over precision-formed areas capable of meeting maximum stresses through long operating life.

Here is the fourth in a series of articles being presented by The Oil Weekly presenting trends in design, construction, application and maintenance of important classifications of oil-field and pipe-line equipment.

Previous articles, on Spudders, Boilers and Drill-Stem Units, appeared in our issues of April 29, August 19 and November 4, 1940, respectively.

As a result of these limitations, the tendency in design and construction of the types of equipment for heaviest loads is to make them divisible into a number of more or less completely integrated parts, each of which may be hoisted to the top independently and the lot there assembled into a completed crown block without the aid of tools and accessories other than the wrenches necessary for making up the bolts joining the sections.

Limitation of the spread of sheaves axially or laterally in the crown block, held to a theoretical maximum of 66 inches by standard water-table aperture, results in a practical allowable of that figure minus twice the width of whatever side plates or supporting members are deemed necessary for carrying the main (and, if any, the auxiliary) pins on which the sheaves rotate, and through which the load is transmitted to the frame.

None of the crown blocks as at present designed requires the full width of water-table opening, one six-in-line block having a maximum width of 55 inches, which places the load sustained by the block close to the corners of the derrick and reduces to a minimum the bending moment imposed on the water-table beams.

Restrictions placed on the width of crown and traveling blocks by water-table openings are augmented or exceeded by one in which the clearance figures but indirectly. Stacking room for long strings of pipe within the derrick seriously restricts any attempt to add width to the traveling block in an effort to provide greater bearing area for the individual sheaves.

Reinforcement for the center pin in some types of crown blocks is secured through the use of a center support, which acts to transfer much of the loading from the centers of the side beams to the ends of the frame where it is supported directly by the water table. This construction distributes the unit

—Photo by Robert Yarnall Richie

area stresses and makes it possible to use lighter beams.

Likewise indirectly, this provision for pipe-racking space circumscribes the width of the crown block, as a unit with wide sheave spacing at the top of the derrick, even if mated with a streamlined, narrow traveling block, would result in a flaring string-up, with danger of the nearest lines becoming fouled on the last strings of pipe racked.

Fleet Angle

The fleet angle is defined as that side angle at or from which the rope approaches the sheave or drum. It is the side angle included between the center line of sheave rotation and the axis of the hoisting line and, in drilling practice, varies continually during the hoisting cycle. Commonly accepted engineering practice sets a maximum limit of one and one half degrees on the fleet angle. Where fixed sheaves and hoisting drum only are considered, it is that angle attained when the wire rope reaches either end of its traverse on the drum—assuming a central location with respect to the drum of the crown-block sheave on which the drawworks line is run.

Since string-up limitations prevent the use of the center sheave, as on a five-sheave crown block, from being selected to handle the drawworks lead, the fleet angle is increased toward whichever side the live line is moved. In extreme instances the value of the fleet angle from sheave to near end of the drum is zero, with the entire offset being on one side of the drum, and maximum fleet angle double that were centralized sheave location possible.

A second location of fleet angle, and one little regarded by men on the rig, is that formed by the lead or advance of the wire line between one sheave on the crown block and the next on the traveling unit. This fleet angle, while not apparent when the hook is near the floor, increases with the ascent of the traveling block until, at maximum lift, the fleet angles then formed by the turns may far exceed any attainable between live line and drum.

The fleet angles formed by reeved lines, as distinct from that of the live line, are more serious from the point of sheave and line wear than the one which continually changes—that between the blocks varying in value but always forming in the same direction, and affecting in each phase the same short section of the wire line.

Reduction of this transitory fleet angle is secured in modern blocks by holding sheave thickness to a minimum, by ranking them in two decks in the crown block and placing them in tandem rows in the traveling block, and by setting two of the crown block sheaves with their axes at right angles to the others in the block, thus equipping the two sheaves to serve as cross-over units and permit the lines to be brought back or set so the resultant fleet angles are opposed.

An artificial fleet angle also is formed when returning the traveling block light at the high speeds now commonly employed. This is the angle set up between the line and traveling block sheaves as the block tilts or tends to capsize toward the side on which the slower lines are reeved. The effect is more marked with 1¼-inch than with lighter lines, with wire ropes of stiff construction as compared with those fabricated from lighter or more flexible wires, and on blocks having relatively small sheave diameters.

Whatever the contributing cause, this "capsized" fleet angle frequently causes more severe sheave-flange wear than any other factor, and also amplifies eccentric-bearing loads throughout the unit. The cap-

sizing effect is reduced by making the blocks "bottom heavy," or lowering the center of gravity well below the axis of the sheave pin, by reducing the friction of the individual sheaves, and by grouping of the entire sheave assembly so as to reduce the lever arm through which the capsizing effort can operate.

Capsizing effect, as well as the fleet angle between corresponding sheaves of the two blocks, are both inherent in the commonly used "spiral" reeving used in either left- or right-hand string-ups when five- or six-sheave blocks are loaded to capacity. Both these load distribution factors are anticipated and well covered in newer designs by additions to usual safety factors and the provision of greater bearing capacities.

Sheave Improvements

Relatively soft sheaves, with consequent corrugated grooves to amplify rope wear, have been entirely superseded in the heavier types with special alloy steels, susceptible of hardening through heat treatment until the contacting surfaces of sheave and wire rope resist equally the abrading effects of service, wind-borne grit and tangential chafing due to fleet angle misalignment. Fully heat-treated sheaves, of special alloy steels to develop desired toughness under

Composite Crown Block Specifications

The specifications below are given for reference only to a specific manufacturer's product and are not suitable for comparative purposes except in connection with detailed drawings and complete design data.

MANUFACTURER	Model	Rating Tons*	No. & Size Sheaves	Center Pin	Bearing Type & Dimensions	End or Bkt. Pins	Beam Size	Spacer Plates	Width Approx.	Height Approx.	Weight Approx.
American Well & Prospecting Company	95-48	350	6—48	9.50	Roller (Str.) 9.50 I.D. O.D. Wide	None	7′ 6″ 70 lb I	None	49	....	7200
	8-46	255	6—46	8.00	Roller (Str.) 8.00 I.D. O.D. Wide	None	Fabri-cated	None	55	....	6475
Beaumont Iron Works Company	KY	360	6—42	7.873	Roller (Str.) 7.873 I.D. O.D. Wide	5.00-B	7′ 6″ 190 lb. H 14″	2—1.5″ 2—0.75″ 3—0.50″	52	59.56	10160
	KW	150	5—36	5.00	Roller (Tpr.) 5.00 I.D. O.D. Wide	4.00-B	7′ 6″ 136 lb. H 10″		45.75	41.75	5550
Brewster Company	CH-648	350	6—48	7.874	Roller (Str.) 7.874 I.D. 14.173 O.D. 4.75 Wide	3.94-E	7′ 6″ 100 lb. I 20″	0.75	49.5	52	7800
	CH-642	250	6—42	7.087	Roller (Str.) 7.087 I.D. 12.598 O.D. 4.25 Wide	3.44-E	7′ 6″ 75 lb. I 18″	0.625	45	47	6000
Emsco Derrick & Equipment Company	M-50-6	350	6—50	19.00	Roller (Str.) 19.00 I.D. 27.50 O.D. 3.813 Wide	None	8′ 0″ 120 lb. I 24″	None	43.87	55.25	9545
	EB-42-6	300	6—42	8.00	Roller (Str.) 8.00 I.D. 10.50 O.D. 3.93 Wide	6.00	120 lb. I 24″	0.50	51.31	52.75	8950
International Derrick & Equipment Company	CB-548	325	5—48	7.25	Roller (Str.) 7.25 I.D. O.D. 4.50 Wide	5.00-E	7′ 6″ I 20″		46	52	8000
	CB-536	200	5—36	6.00	Roller (Str.) 6.00 I.D. O.D. 3.50 Wide	4.00-E	7′ 6″ I 18″		46	42	4975
National Supply Company	648-TU	360	6—48	10.25	Roller (Str.) 10.25 I.D. O.D. Wide	None	7′ 6″ 120 lb. I 24″	None	51	57.28	9277
	648-M	240	6—48	8.75	Roller (Str.) 8.75 I.D. O.D. Wide	None	7′ 6″ 120 lb. I	None	48.75	54.50	7200
Oil Well Supply Company	300	300	6—46	8.00	Roller (Str.) 8.00 I.D.		7′ 6″ CB 24″	Center Truss	53.5	58.75	7655
	200	200	6—36	6.00	Roller (Str.) 6.00 I.D.		7′ 6″ I 20″	Center Truss	45.5	47.63	4900
Regan Forge & Engineering Company	EH	300	6—48	6.02 Unitary	Roller (Str.) 6.02 I.D. O.D. 2.50 Wide pairs used		8′ 0″ 120 lb. I 24″		60	67	10860
	EM	180	6—48	5.57 Unitary	Roller (Str.) 5.57 I.D. O.D. 2.50 Wide pairs used		8′ 0″ 81.4 lb. I 20″		53	60	8550
Wheland Company	J-300	300	6—46	10.00	Roller (Str.) 10.00 I.D. 15.25 O.D. 4.125 Wide		7′ 6″ 120 lb. I 24″	None	44.63	55.5	7100
	J-6600	250	6—36.5	7.00	Roller (Str.) 7.00 I.D. 11.00 O.D. 4.125 Wide		8′ 0″ 70 lb. I 15″	7—0.875	43	55.75	6350

All dimensions in inches unless otherwise noted.
* Manufacturers' ratings, correlated at 100 Rpm. on fast-line sheave.

Modern Heavy-Duty Crown Blocks

The American Well & Prospecting Company, Corsicana, Texas, makes the "Gumbo Buster" 8-46 straight line crown block, designed for the deepest drilling, with rated capacity of 255 tons.

It is designed with two center pins for strength, long life, and convenience of assembling in place on top of the derrick. The block is so constructed that it can be taken to the top of the derrick in as many as four pieces by simply separating the two center beams and lifting the sheaves and center pins from each section. The weight of the heaviest section when thus handled is only 1686 pounds, which permits safe and easy handling.

The block weighs 6475 pounds and is of all steel construction throughout with six large 46-inch diameter manganese steel sheaves operating on heavy-duty straight roller bearings.

The block shown at top, left, is a companion block to and designed for use with the 8-46N traveling block.

Beaumont Iron Works Company, Beaumont, Texas, manufactures its Type "KY" straight-line drilling crown block in capacities ranging from 125 to 420 tons; with sheave diameters from 30 to 48 inches, and with from four to seven sheaves to the block. An "A" frame construction, supporting the ends of the main pin in a truss, carries the loading from the centers of the side beams to near the ends, distributing the weight over a large area. Bearings are rated at full capacity at 100 rpm. Spacer plates distribute load between main and becket pins, with becket truss still further stiffening upper pin. The block is handled as a unit or in two sections for mounting. Illustrated at center left.

The Brewster Company, Inc., Shreveport, Louisiana, manufactures roller bearing in-line crown blocks or the three-pin type and mated with corresponding traveling blocks to reduce side pull to a minimum. The blocks are available in 350-, 250- and 125-ton capacities, with from four to six sheaves in diameters from 30 to 48 inches. Sheaves are alloy machine steel with API grooves machined and flame-hardened. The three pins are supported in the same paired heavy housings, transmitting the thrust over a wide area of the side beams. Built-up web reinforcements are centered under all pins. The block may be raised as a unit or in two sections. It is illustrated at bottom, left.

The Emsco Derrick & Equipment Company, Los Angeles, California, makes the Series "M-50" crown blocks shown at top, right, for heaviest and fastest drilling. The in-line sheaves are 50 inches in diameter, with 27½-inch O.D. bearings to minimize side pull, as the bearings are close to the rope groove tilting effect is greatly reduced. The large roller bearings are designed to take side thrust loads, eliminating thrust washers and plates and the possibility of sheave contact. The alloy-steel, heat-treated and statically and dynamically balanced sheaves are interchangeable between crown and traveling blocks, with identical sheave center

distances to minimize fleet angle. The drum carrying inner races of bearings permits change through any angle to absorb bearing wear. The crown block comes in six or seven sheave design with individual lubrication through drum conduits to bearing races.

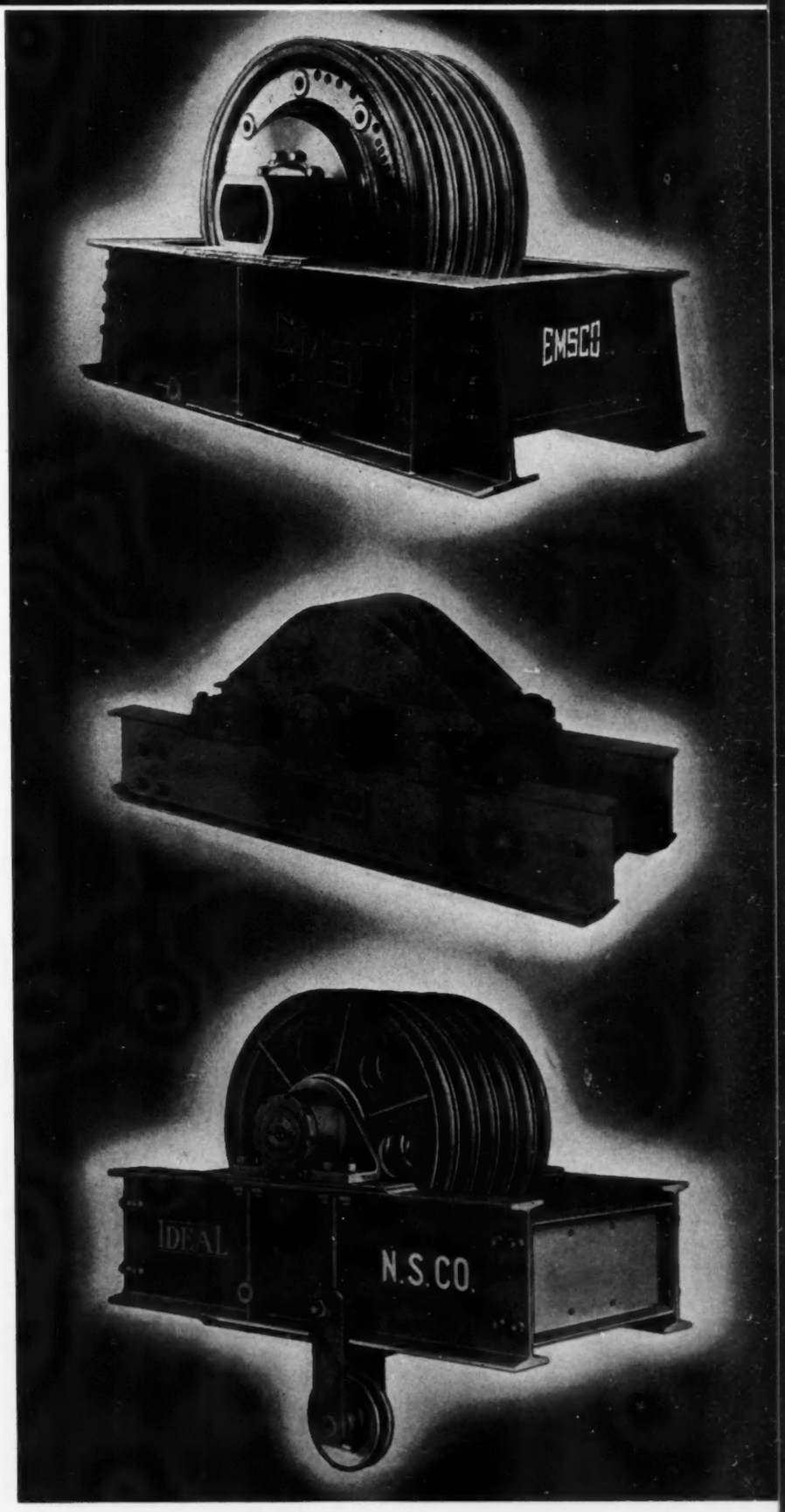
International Derrick & Equipment Division of International-Stacey Corporation, Beaumont, Texas, makes a three-pin straight-line crown block in four sizes with capacities ranging from 325 to 100 tons, illustrated, center right. Sheave sizes range from 48 to 30 inches, and are available in chrome-nickel, high-temper or manganese steel, all grooved to API standards. Sheaves and bearings are interchangeable with those of corresponding traveling blocks in same series. Block is fitted with formed sheave guard and abutting spacer plates to insure against rope kinking. Sheaves and center pin are fully heat-treated.

The National Supply Company, Toledo, Ohio, offers Types 648-T and 648-TU Ideal single shaft crown blocks with independently mounted sheaves, as shown at bottom, right. They have six 48-inch roller bearing manganese steel sheaves and a rated capacity of 360 tons. These blocks have each sheave held in a fixed lateral position on the shaft. Three selections of bearings are available.

The shaft is an alloy steel forging, bored prior to heat-treating to retain the mechanical properties of the steel and to obtain a more refined and uniform grain structure. The shaft is suported in end boxes and keyed to prevent rotation. One end is machined with a head and all parts are assembled from the opposite end, being held in position on the shaft by a nut, which insures a perfect lock for the assembly. Keys hold all bearing races and thrust washers firmly in position and prevent rotation. This compact assembly can be removed and handled as a unit.

When the block is equipped with straight roller bearings the bronze thrust washers are locked in position between the sheaves, making each independent and eliminating thrust and crowding. Graphite plug inserts in each washer reduce wear. The large electric manganese steel sheaves materially reduce the bending strain on the wire line. The entire assembly is locked on the main shaft to prevent any side sheave motion and to insure compactness and minimum width. The block may be dismantled for installation when gin pole capacity or clearance will not permit raising the entire unit.

Ideal 88-inch traveling blocks are companion units to the Ideal Type 648-T and 648-TU single shaft crown blocks. Having the same sheave spacing, side friction is reduced, and identical sheave diameters allow the traveling block to be raised much higher by eliminating wire line flare. The entire sheave and bearing assembly of the 548-T traveling block is interchangeable with that of the 648-T crown block and the sheave and bearing assemblies of the 548-TC and 548-TCH traveling blocks are interchangeable with that of the 648-TU crown block.



Modern Crown Blocks—Continued . . .

The Oil Well Supply Company, Dallas, Texas, features its No. 300 crown block, illustrated at top, rated at 300 tons, in center-truss construction. The center pin is supported on the two main beams and by the center truss, whose ends are mounted on the two cross beams. This prevents deflection of the center pin and places the load on all four base beams. Flanged design gives the center truss strength without sacrificing close sheave spacing.

The center pin is an 8-inch diameter, alloy-steel forging, drilled for individual, grease-pressure lubrication to the 46-inch O.D., manganese-steel sheaves. These are precision-balanced, with grooves accurately ground. The six-in-line arrangement and the close spacing minimize side-drag.

The No. 300 crown block can be hoisted in two main pieces, the heavier weighing 5500 pounds. The base is first hoisted to the water table and mounted. Bolts are then loosened at one side and the main beams pulled apart far enough to permit the sheave assembly to pass through. The beams are then bolted securely and the pin and sheave assembly, including the center truss, is lowered into position and fastened. In derricks having gin poles of sufficient height, the block may be installed in one piece.

Sheaves and bearings are interchangeable with those used in the 80-inch streamline traveling block — companion unit to the No. 300 crown block. Other crown blocks for rotary drilling are designed for maximum safe working loads of 200, 150, and 100 tons respectively.

Regan Forge & Engineering Company, San Pedro, California, makes a Type EH crown block in 600-ton dead weight capacity, or 300 tons at 100 rpm. This block, shown at center left, is of staggered in-line design, with sheaves carried on individual pins and dual straight roller bearings. Of combination fabricated and welded construction, the block may be placed as a unit, or dismantled as much as required by water-table and gin-pole limitations. Sheaves are dynamically and statically balanced, of 48-inch diameter, with standard API ground grooves. Bearings are SAE 3120 chrome nickel alloy, carburized and heat-treated. Each side is individually lubricated through pressure-gun grease conduit connected to sheave beams.

The Wheland Company, Chattanooga, Tennessee, makes a heavy-duty in-line crown block with either five or six sheaves, in capacities ranging from 125 to 300 tons, based on live line sheave speed of 100 rpm. This unit is shown at bottom, left. Straight roller bearings, with pressed in races, are used throughout, with individual pressure-gun lubrication through the center pin. The sheave unit is carried in paired A-frames, on which hinged covers are optional. Sheave diameter ranges from 36½ to 46 inches, and sheaves are of manganese steel. Sheave assembly, including side bars, space plates bail, shaft and upper pin, is finished as a unit, and may be handled to water table independently of I-beam base.

heating and quenching, fitted to accurately machined and ground bearing races, permit a high quality groove finish. These sheaves, balanced both statically and dynamically, deliver a service life many times that secured from earlier designs under much lighter load ratings.

One design of sheave takes advantage of the newly-perfected flame-hardening process to raise the hardness factor of the sheave grooves. The machined and ground groove, accurately finished to template for the designated size of wire rope, is slowly revolved beneath a specially regulated oxy-acetylene flame and the surface brought to the proper temperature. With the proper alloy steel, this forms an extremely hard and wear-resistant skin over the underlying metal—itself unchanged and possessing its inherent toughness and shock-resisting qualities—the process affording the proper surface contour as long as groove dimensions continue to meet the standard for the size of line being carried.

Interchange of crown- and traveling-block sheaves, through changes in design to permit the use of the same rotating unit in both blocks, halves the number of spares which good practice demands be kept in stock for emergency repairs. Employment of all sheaves of the same size and with uniform bearing characteristics also permits a larger number of possible changes or shifts to replace the fast-line sheaves with those which have served on the dead- or slow-line sides. Where this interchange of sheaves is possible to distribute wear, some provision is included to insure that the entire individual sheave assembly — consisting of sheave, bearing and paired inner and outer races—is moved as a whole. Unless this precaution is engineered into the blocks, mismated bearings and races will inevitably occur under haphazard and hurried field manipulation, with possible severely localized stresses or high load concentrations which may result in excessive wear or even in speedy breakdown.

Since capsizing effect is always present — and visible — when returning the traveling block light, the forces resulting in this action are present though suppressed when lifting loads. Likewise, distortion due to the tendency of the traveling block to rotate slightly to offset fleet angle torsion is present as a force which must be balanced throughout the hoisting cycle.

The summation of these overturning forces is resisted by the central support or pin on which the sheaves rotate. The lever arm against which this force operates is equal to the distance from the center line of the sheave to the end of the bearing, at or projected to the axis of rotation and with the limiting lines both passing through the center of the rope as it lies in the sheave groove. Since with the demand for augmented sheave diameters the other lever arm through which the overturning effort operates is also lengthened, provision of adequate support to offset this factor is extremely necessary to prevent crowding or cramping of the bearing at the extreme edge of the contacting surfaces.

This transverse stability is secured in any one of three ways, or by combining features from each. (1) by fitting the sheave itself with a pin, rigidly fixed thereto and revolving with the sheave; (2) by incorporating a wide bearing in the hub of the sheave; and (3) by enlarging the circle of the bearing outwardly from the pin toward the rope groove.

Use of a fixed pin within the sheave provides extended support, and permits the calculation of bearing area adequate to the designated loading. Here, the overall width permitted by derrick opening and conditions of rope reeving limit the extent to which this feature of design may be employed.

A wide bearing, extended considerably outside the hub limitations, while supporting the sheave adequately against overturning, is mechanically and structurally inefficient in that the area provided is so great that it does not carry standard loadings per square inch of projected surface, and the expense of installing and maintaining the long bearings is out of proportion to the benefits obtained. Practical limitation of bearing width in the heavier units is set by available total permissible width within water-table aperture or/and allowable fleet angle.

Enlarging the bearing circle effectively extends the effective support against overturning. On a sheave nominally 50 inches in diameter, with 27½-inch outside diameter of the bearing race, 1 inch of roller length on either side of the sheave center line affords a lever arm against the unbalanced force equivalent to almost twice that distance at the axis of the sheave. Lubrication difficulties, due to the relatively high rotative speeds of the rollers in a bearing of such diameter, set a practical limit to the employment of this means of providing lateral stability to the sheaves.

Increase of the bearing diameter to bring the bearing support as close as practical to the groove in which the rope is carried soon exceeded the diameter of a solid pin necessary to meet all requirements for supporting maximum loading. Introduction of the hollow pin permitted reduction of weight without sacrifice of essential structural rigidity, and enabled the ends outside of the lands for bearing races to be formed with flats or even squared ends to permit rotation of the pin through 90 or 180 degrees to bring a new portion of the fixed inner race to the position sustaining greatest load concentration.

Reversing direction of wear and exchange of fast and slow sheaves, practiced by many drilling companies when rerigging after a move, divides the high-speed wear between the end sheaves of both blocks, and thus permits the postponement of time when wear makes replacements necessary. One block manufacturer recognizing the extreme loading and speed conditions which the fast-line sheaves must face, offers a combination unit in which the sheaves at both ends of the unit may be mounted on paired tapered-roller bearings while the remaining sheaves are carried on the usual straight-roller bearings.

Use of the tapered-roller bearings on the outer sheaves—being those normally carrying greatest fleet angle misalignment and being most exposed to capsizing effect—permits the bearing to absorb the entire thrust forces set up without the interposition of a spacer plate, or the imposition of end loads on plain rollers. By setting these adjustable sheaves at the outermost positions on the blocks, the usual reversal between jobs alternates the high-speed wear, and permits the block to give greatly increased ton-miles before overhaul or replacement is required.

In staggered blocks, where the designer has available all but necessary clearances at sheave spokes or webs, use of fixed pins with paired bearings at the ends of the individual pins permits efficient bearing performance with great

Modern Heavy-Duty Traveling Blocks

The American Well & Prospecting Company, Corsicana, Texas, makes The Gumbo Buster 8-46N traveling block with rated capacity of 255 tons, shown at top, left. All projecting nuts are recessed into the cast steel side plates and are securely locked in place. The upper and lower clevis pins are contained in streamlined steel castings with no projecting surfaces. These features, combined with low center of gravity and extra long pendulum, allow the block to be run as fast as the drilling crew can handle it.

The built-in wire line guards are easily removed but do not have to be removed in order to string up the block.

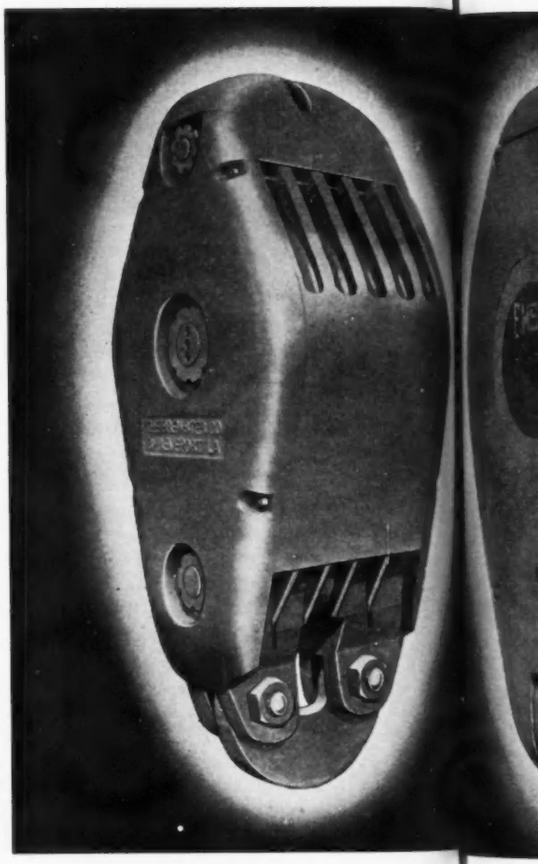
The lower clevis can be swung on either side of the block to form a support for standing the block upright. This, combined with the fact that the guards do not have to be removed, provides a rapid and easy method of stringing up the block.

The five sheave block weighs 8610 pounds and is of all steel construction throughout. The five 46-inch diameter manganese steel sheaves operate on heavy duty straight roller bearings, each of which is individually oiled.

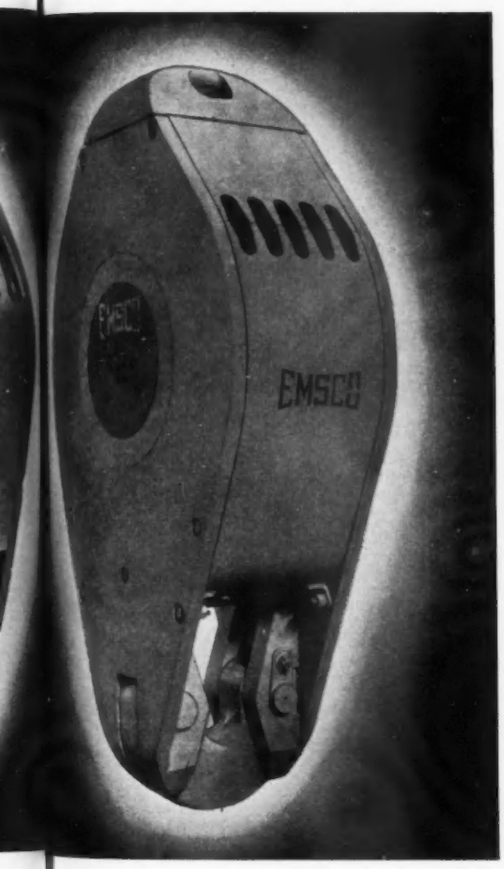
This block is a companion block to and designed for use with the 8-46 crown block.

Beaumont Iron Works Company, Beaumont, Texas, makes the Type "PY" traveling block in capacities from 50 to 360 tons, with sheaves ranging in diameter from 26 to 48 inches, and equipped with from two to six sheaves. On the heavier weight blocks the bail is split to distribute the load evenly so that all separator plates carry a portion of the lift. All blocks are fitted to stand on the derrick floor to facilitate stringing. The block is made stable when returning empty by a high pin center and weight distribution in the side plates. The block is streamlined as shown at bottom, left, and without projections to catch on stacked drill stem.

The Brewster Company, Inc., Shreveport, Louisiana, manufactures streamlined roller bearing all-steel traveling blocks, balanced and weighted to insure straight fall. Pins are SAE 4140 steel. Sheaves are alloy steel, with API line groves machined and flame-hardened. The blocks are available in 300- 200- and 100-ton capacities, with three to five sheaves, in diameters from 30 to 42 inches. All bearings are rated at 100 rpm. The built-up bail has split yokes to distribute load over space plates. Bail may be opened without disturbing bottom or bail pin. All pins are countersunk to insure free running with capacity pipe in derrick.



Emsco Derrick & Equipment Company, Los Angeles, California, features its Series "M-50" traveling block for deepest and fastest drilling. The five or six 50-inch sheaves are mounted in line, on a 19-inch diameter center drum carrying individual lubrication leads to the inner bearing races. The roller bearings are 27½" O.D. The side plates are of



rolled steel plate, with built-up boxes to carry hinged clevis which may be dropped for hooking on swivel without dismantling block. The top becket is streamlined, and faired within the cap to maintain streamline design and prevent fouling of line or drill stem. Streamlined guards of block may be easily installed or removed for shifting lines without extra reeving when adding lines. Twin objectives, to produce a block extremely narrow, and to maintain large capacity, actuated the design of this block.

International Derrick & Equipment Division of International-Stacey Corporation, Beaumont, Texas, makes a streamlined, in-line traveling block in four sizes with load capacities from 300 to 90 tons. Three-, four- and five-sheave types are made, fitted with chrome nickel or manganese steel sheaves in 48- or 36-inch diameters, with chrome nickel heat-treated center pin. Bottom of side plates and weighted spacers is squared to afford footing for reeving lines. Weights and guards are full streamlined to avoid fouling stacked drill stem. Standard 1¼-, 1⅛- and 1-inch grooves to API specifications available in all sheave diameters. Illustrated at top, right.

The National Supply Company, Toledo, Ohio, offers the Ideal 88-inch traveling block with independently mounted sheaves, shown at bottom, right. It is designed for extreme drilling with five 48-inch roller-bearing manganese-steel sheaves, and rated at 300 tons.

This block is available with three selections of bearings.

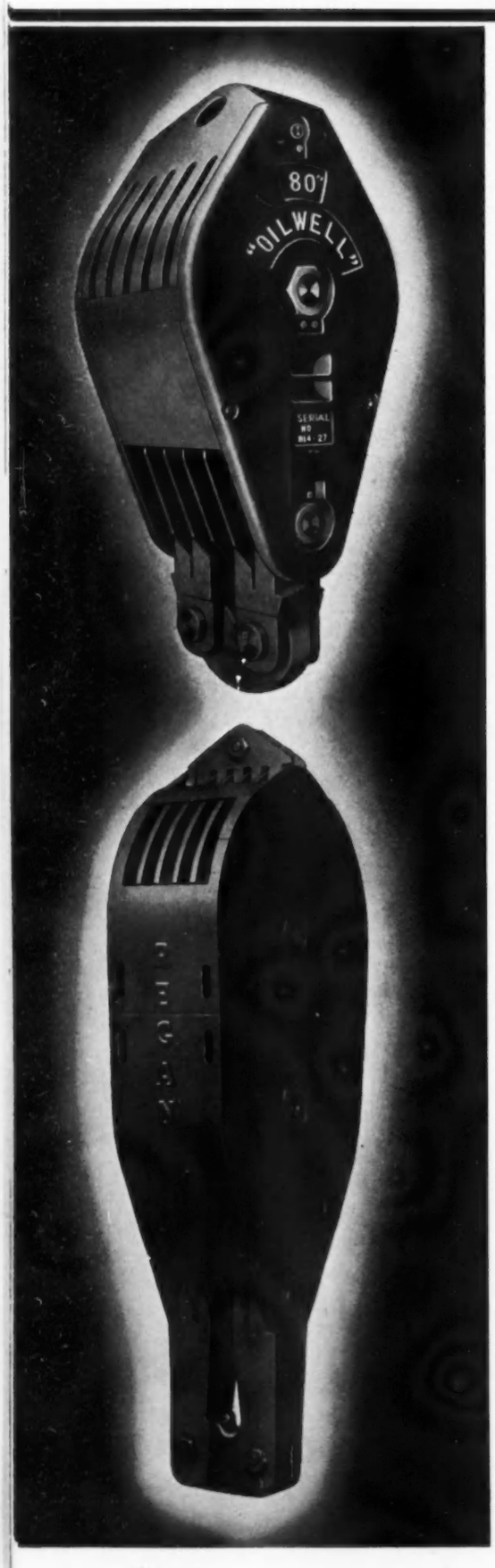
When equipped with straight roller bearings, bronze thrust washers are locked in position between the sheaves. This construction makes each sheave independent and minimizes wear of the hubs by eliminating crowding with its cumulative thrust.

A feature is the rigidity obtained by the cast upper bracket and side plate construction. Each side plate is reinforced by the upper, lower and center pins which extend from side to side. The side plates are composed of two parts—a rolled steel load-carrying plate and a cast-steel cover section, securely welded together. The load-carrying plate is two inches thick and extends from the center pin to the lower pin. No load is taken by the cast portion which acts as cover.

The large diameter sheaves materially reduce the bending strains in the wire line. The sheaves are electric manganese steel with grooves ground to API specifications for 1¼-inch wide line. Each straight roller bearing includes 24 1¼-inch rollers which revolve in a bronze retainer. The alloy steel inner races are keyed to the shaft, preventing turning, and, being a sliding fit, may be easily removed by hand.

The center and lower pins are forged from alloy steel, heat-treated. The lower clevis is an alloy-steel forging. It provides simplified engagement of the hook bail, as it is necessary to remove only one pin to permit the clevis to swing open. When reeving, it is necessary to remove only two bolts near the top of each guard and let it swing down on its hinges. Spacers at the bottom prevent the line from leaving the grooves; they are designed for quick removal to shift the line to balance the block when using less than ten lines.

Modern Traveling Blocks—Continued . . .



Oil Well Supply Company. Dallas, Texas, designs its 80-inch streamline traveling block to be run as fast as the crew can handle the string. The side plates are steel castings with recesses for heads and nuts of pins and guard bolts. The hood or upper clevis is a streamlined steel casting, joining the upper ends of the side plates without projections or sharp corners, as shown at top, left. The upper parts of the sheave guards are integral with this hood. The balanced design with a low center of gravity maintains the 80-inch streamline traveling block vertically even when run without load at the highest speeds.

Accurately balanced, 46-inch O. D., manganese-steel sheaves are mounted on heavy-duty roller bearings with renewable, hardened-and-ground inner and outer races. Sheaves and bearings are closely spaced. The center pin is a large-diameter, alloy-steel forging, drilled for individual, grease-pressure lubrication.

A feature of the 80-inch streamline traveling block is provision for stringing the lines. No guards need be removed. The upper part of the guard is cast integral with the hood with correctly spaced fingers extending to the level of the sheave centers. These fingers curve to meet the contour of the side plates. The lower part of the guard is a cast-steel plate curved to the block contour. The guard plates are tapered at the bottom on the inside so that when stringing, the wire rope follows the sheaves and cannot hang. The lower clevis can be swung approximately 90 degrees from the vertical, supporting the block upright on the derrick floor.

Bearings and sheaves are interchangeable with those used in the No. 300 crown block—companion unit to the "Oilwell" 80-inch streamline traveling block, rated for a safe working load of 300 tons. Other sizes are designed for safe working loads of 200, 150, and 100 tons respectively.

Regan Forge & Engineering Company. San Pedro, California, makes a narrow type traveling block, Type H, in four to six sheave designs, with dead load ratings from 340 to 500 tons which, on a basis of 100 rpm, gives nominal ratings of 170 to 250 tons. Alloy steel sheaves, statically balanced, are mounted on individual pins with dual straight roller bearings. Staggered sheave placement with completely streamlined guards affords maximum derrick space for pipe. Bearings are of SAE 3135 forged steel, carburized and heat-treated. Face guards are ASTM Class "A" 95-36 steel castings. Connecting pins are SAE 1030 rolled steel, machined to close tolerances. These pins operate in multiple shear. Lower end hangers distribute cross yoke load across entire block. Hinged yoke is of SAE 4140 steel, and pivots to receive swivel bail. Illustrated at bottom, left.

The Wheland Company. Chattanooga, Tennessee, builds the Wheland-Lucey heavy-duty streamline traveling blocks in two sizes, 200 and 300 tons capacity, carrying five sheaves, of 36½- and 46-inch diameters respectively, shown below. Heavy-duty straight roller bearings, with hardened races pressed into sheave

hubs, are individually lubricated through center pin conduits. Clevis-type hangers, with pins and hinged cross bar, facilitate connection to swivel. Removable rope guards may be changed or replaced without restringing block. Side plates, of cast steel, are equipped with countersunk hand holds to facilitate safe handling of the block. When swung to one side, the bail forms a footing for holding the block upright for stringing.

resistance to overturning effect. These individual pin assemblies, being completely unitized, may offer an ease of interchange of the outer sheaves which is not attained when the entire set is carried on one main drum or enlarged shaft.

Recognition of the need for frequent line changes, as a hole goes progressively deeper, and more lines must be added to carry the drill-stem load, shows in the provision for shifting a line from one sheave to an adjacent one without the necessity of re-reeving the entire string-up. This is accomplished in block of the in-line type without spacer plates by the removal of line guides or guards which normally act to confine a loose line within the groove of the sheave over which it normally runs. By temporarily removing one or more of these guards, depending upon the number of lines to be shifted to make room for the added fall, the wire rope may be moved as desired, simply by running a little slack in the line after the traveling block has been set on the floor.

With the removable guards, adding a line means simply the reeving of the added turn at the end of the block.

Ease of stringing is aided by the installation of guides within the shells of traveling blocks, so that lines may be run without removing side or end plates, without danger

Composite Traveling Block Specifications

The specifications below are given for reference only to a specific manufacturer's product and are not suitable for comparative purposes except in connection with detailed drawings and complete design data.

MANUFACTURER	Model	Rating Tons*	No. & Size Sheaves	Center Pin	Bearing Type & Dimensions	Becket Pin	Bail Pin	Spacer Plates	Length Approx.	Width Approx.	Weight Approx.
American Well & Prospecting Company	**8-46N**	**255**	**5—46**	**8.00**	**Roller (Str.) 8.00 I.D. O.D. Wide**	**4.00**	**6.00**	**0.625**	**107**	**32.5**	**8610**
	66-B	200	5—36	7.00	Roller (Str.) 7.00 I.D. O.D. Wide	4.00	5.00	0.625	98	36.5	7650
Beaumont Iron Works Company	**PY**	**300**	**5—42**	**7.873**	**Roller (Str.) 7.873 I.D. O.D. Wide**	**3.00**	**5.00**	**1.00**	**116.75**	**35.62**	**11825**
	PR	180	4—36	5.00	Roller (Tpr.) 5.00 I.D. O.D. Wide	3.00	3.75	0.875	101.75	26.5	5670
Brewster Company	**TH-542**	**300**	**5—42**	**7.874**	**Roller (Str.) 7.874 I.D. 14.173 O.D. 4.75 Wide**	**3.50**	**6.00**	**0.625**	**100**	**36**	**10250**
	TH-536	200	5—36	7.087	Roller (Str.) 7.087 I.D. 12.598 O.D. 4.25 Wide	3.00	5.25	0.500	84	32	9500
Emsco Derrick & Equipment Company	**M-50-5**	**325**	**5—50**	**19.00**	**Roller (Str.) 19.00 I.D. 27.50 O.D. 3.813 Wide**	**Two 2.00**	**Two 4.00**	**None**	**108.2**	**24.31**	**10960**
	A-76	210	5—42	8.00	Roller (Str.) 8.00 I D. 10.50 O.D. 3.93 Wide	3.50	6.00	0.50	108.25	31.56	9630
International Derrick & Equipment Company	**TB-584**	**300**	**5—48**	**7.25**	**Roller (Str.) 7.25 I.D. O.D. 4.50 Wide**	**2.50**	**6.00**	.....	**118**	**30.5**	**11000**
	TB-572	180	5—36	6.00	Roller (Str.) 6.00 I.D. O.D. 4.00 Wide	2.50	4.00	.....	97.5	27	7325
National Supply Company	**548-TC**	**300**	**5—48**	**10.25**	**Roller (Str.) 10.25 I.D. O.D. Wide**	**3.50**	**7.50**	**None**	**116**	**34**	**11928**
	C-76	225	5—42	8.75	Roller (Str.) 8.75 I.D. O.D. Wide	3.43	6.00	None	105	32.12	9177
Oil Well Supply Company	**80-inch**	**300**	**5—46**	**8.00**	**Roller (Str.) 8.00 I.D.**	**2.875**	**6.00**	.....	**109.25**	**38.5**	**10080**
	60-inch	200	5—36	6.00	Roller (Str.) 6.00 I.D.	2.00	4.00	.....	93	31.38	5600
Regan Forge & Engineering Company	**H-104**	**250**	**6—48**	**6.02 unitary**	**Roller (Str.) 6.02 I.D. 11.00 O.D. 2.50 Wide pairs used**	.....	**6.00**	.....	**125**	**26.5**	**11000**
	4B-76	150	5—39.5	4.75 unitary	Roller (Str.) 4.75 I.D. O.D. Wide pairs used	.....	.....	.....	104.13	32.87	9800
Wheland Company	**K-7050-B**	**300**	**5—46**	**7.00**	**Roller (Str.) 7.00 I.D. 12.25 O.D. 4.75 Wide**	**1.94**	**5.00**	**0.875**	**115**	**32.25**	**9300**
	K-6050-C	200	5—36.5	7.00	Roller (Str.) 7.00 I.D. 11.00 O.D. 4.00 Wide	1.94	4.94	0.875	97.5	32.25	8030

All dimensions in inches unless otherwise noted.

* Manufacturers' ratings, correlated at 100 Rpm. on fast-line sheave.

of crossed turns or difficulty from thrown loops.

A feature of some types of traveling blocks is a bottom clevis which can turn through 90 degrees and then abut against a positive stop, forming a foot on which the unit may be rested while stringing up. Other traveling blocks, formed without bails in an effort to cut down on overall length and consequent lost line at end of travel, have the end plates faced off square so as to form footing upon which the block may be supported safely.

Lubrication

Fluid lubrication of sheave bearings in the heavier units has been almost superseded by pressure-gun-grease systems. Each bearing, being self-contained and enclosed with grease retainers, is fed from a separate fitting in the end of drum or shaft upon which the bearings are carried. Where solid pins are employed, these grease lines are bored within the metal, with laterals at right angles to the bearing sites. On the larger units, where a hollow drum provides adequate support for the bearing races, an end plate carries the grease nipples, with flexible conduits to the individual bearings. Small pipe, formerly used for this purpose, has been practically discontinued due to its tendency to work apart under vibration, and to divert needed lubricant from the bearings to the interior of the drum.

Provision of adequate grease seals on the precision type bearings being used in latest crown and traveling block design not only conserves lubricant by maintaining it in place in the bearings for which it is intended, it also adds much to possible bearing life by protecting it from grit and moisture which otherwise might work into the bearing from the sheave or be thrown there by rotation of an adjacent unit.

Safety Factors

As at present designed and constructed, practical limitations in the diameter, and consequent safe loading, of the wire rope used in drilling operations set arbitrary limits on individual sheave stresses —with the crown- and traveling-block units capable of sustaining weights in excess of those possible within safe wire rope handling. Thus, to provide greater load capacity as drill stems increase in weight, additional lines must be added to bring about the proper distribution of stresses and the block builder is then faced with the need for providing sheaves to handle more turns in an already circumscribed space.

Present-day blocks, both crown and traveling, are designed with a minimum factor of safety, based on line speeds showing 100 rpm. of the fast-line sheave, of not less than two, with the tendency toward increasing the allowable—below yield point of any materials involved—of three and one half to four.

Drilling records and maintenance reports show surprisingly few crown or traveling block failures under increased loadings, with nearly all of the trouble traceable to faulty lubricant, in which case the human element is found wanting more often than the mechanical.

Today's deep drilling, with sheaves of adequate size and standardized grooves, imposes wire-rope wear which is only a fraction of that met on the smaller drums of the drawworks, with the result that the line may be progressively reeved through the paired blocks and eventually cast aside in increments as drum wear reduces the inherent safety factor below the standard for good drilling practice. If drum increments be taken so as to alternate the points of fleet-angle wear as the traveling block nears the crown block the wire rope will reach the drum with its original diameter and outside wires in such shape that maximum load demands still fall well within the load limits desired.

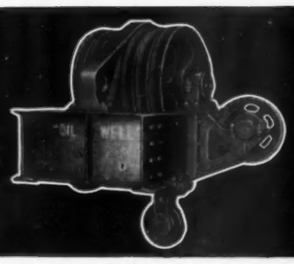
Trend of block design is toward simplification; more complete unitization of each sheave and all its bearing components, in which more widespread use of pressed-in outer races, instead of employing the inner face of the hub for this service, is indicated; and specification of materials susceptible of having incorporated in them, through heat treatment and flame hardening, lasting wearing surfaces which will eliminate reworking until the service life of the unit involved has been exhausted.

Much of the engineering skill engaged in crown and traveling block design today is not concerned with the task of building bigger and heavier equipment as such, but rather with the effective design and construction of units which will perform given operating tasks effectively and safely, if possible with reduction in size and weight over equipment formerly used for less severe drilling loads. Not only are designs highly engineered as compared with equipment formerly used, but in addition they take every advantage of higher quality steels and, through their use, obtain sections and shapes exactly fitted to the loads they are called upon to carry.

Safety and convenience of the men on the derrick floor also will continue to influence block design. Welding of component parts, in place of earlier bolted or pinned design, continues to eliminate parts and thus to render possibility of vibration loosening parts less serious. Welded junctions of surfaces on traveling blocks, susceptible of being ground to streamline contours, will eliminate the occasional accident in which a derrickman's clothing becomes entangled or snagged by the traveling block, and hand injuries from this same source will be still further reduced.

Most injuries received while reeving lines should now, instead of being charged to the block, be marked up against the difficulty in handling the relatively stiff inch and a quarter line demanded by heaviest loads. Unfamiliarity of many crews with this heavy line tends to slow down work which is capable of being speeded up with modern blocks and adequate sheave and line guards.

Double drum, or paired drawworks hoisting, regarded as one possible answer to increased drill-stem loads with present derrick limitations, will require no changes in block design or construction, the substitution of a second live line for the present dead line giving two fast sheaves instead of one, a condition covered by existing designs, in which either end sheave is equipped to meet full load stresses under maximum rotating speeds.



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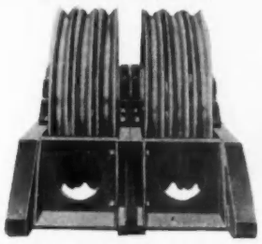

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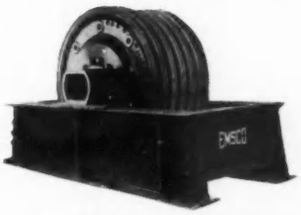

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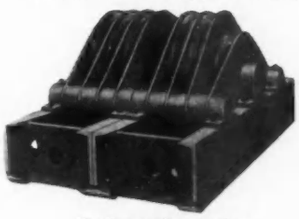

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A shield was used to control the brine flow while running in and coming out of the hole during fishing operations. It could not always be locked quickly enough.

Recover Over Mile of Drill Pipe Against Difficult Odds

High-Pressure Sulphur Gas-Salt Water Flow and Split Drill Stem Create Difficult Fishing Operation

By NORMAN X. LYON, Staff Writer

WHILE failing to get 100 percent recovery of a full string of 4½-inch drill pipe, Gulf Refining Company has succeeded in cleaning out Bateson 1, record depth test for Michigan, to approximately 6400 feet against severe obstacles. The well is believed to have a 50-50 chance for completion to original objectives through sidetracked hole.

A combination of sulphur gas, brine and high pressures constituted one of the major troubles in drill-pipe recovery work. In going in and coming out of the hole, brine flowed in torrents and the sulphur gas made it necessary for periodic shutdowns for fresh air. A pair of rubber gloves ordinarily became worthless during one operation of pulling out or going into the hole, due to reaction of the salt and sulphur.

To add to the difficulties, badly fractured drill stem boxes and in some cases completely parted pipe were found. This is believed to have been due to the combination of sulphur gas, brine and pressures, which set up a crystalization action that split the boxes, causing fractures the width of an ordinary pencil and complete parting of the pipe at the boxes in some instances.

The breakup of the pipe at the boxes probably prevented full recovery of the pipe string. That recovery to 6400 feet was obtained under conditions experienced is regarded as exceptional, for the pipe recovered had 47 splits. Bridges both inside and outside the drill pipe balked attempts to circulate mud, so the entire fishing operation had to be carried on without benefit of even partial control with mud. Approximately 1344 feet of pipe remains in the hole. It is believed to be completely trapped by

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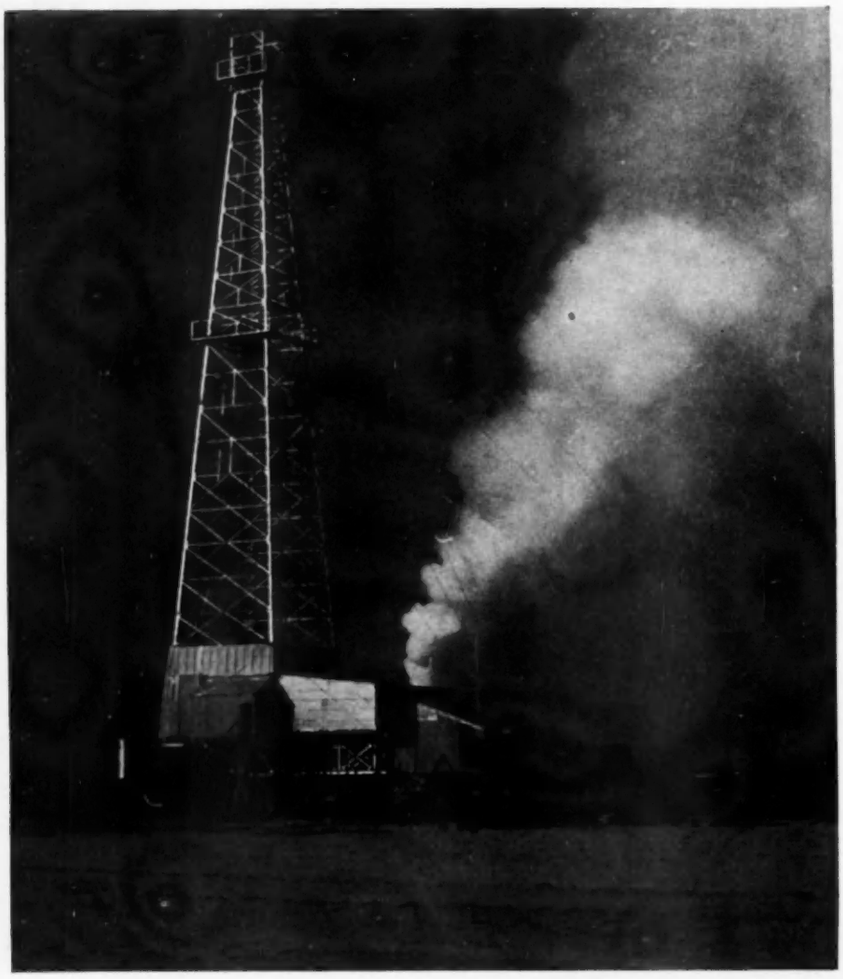


The mist behind the above picture of the new derrick on Gulf Refining Company's deep Michigan well is gas heavily saturated with salt water. The derrick is on a 14-foot substructure to accommodate double blowout preventers and high pressure drilling head shown in the picture below.

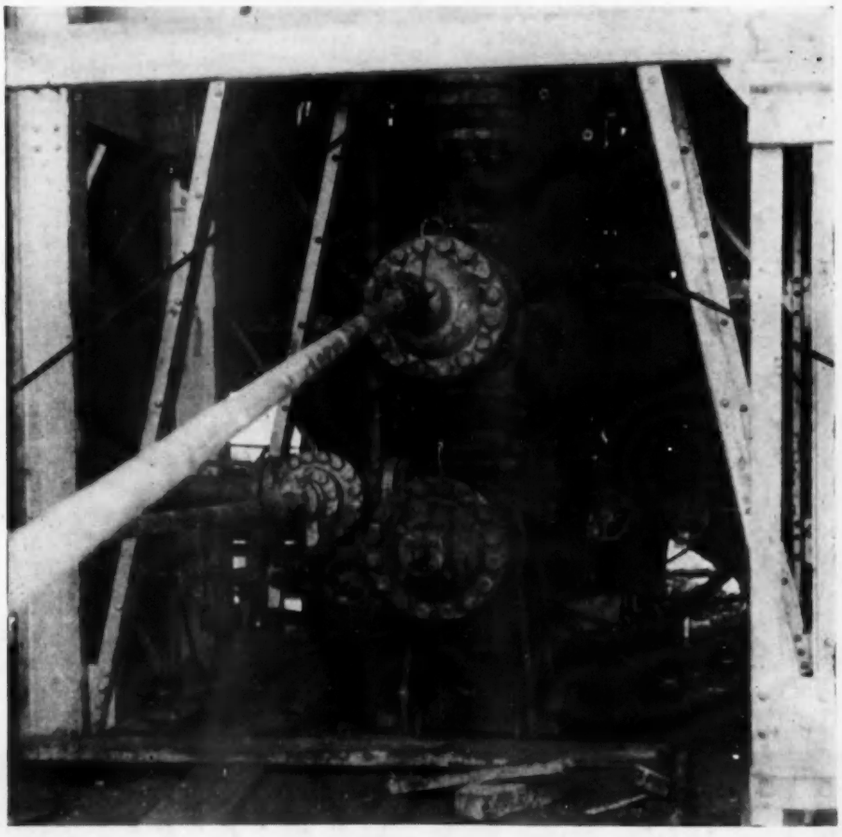
bridging and to be unrecoverable due to the countless splits and fractures in the pipe boxes.

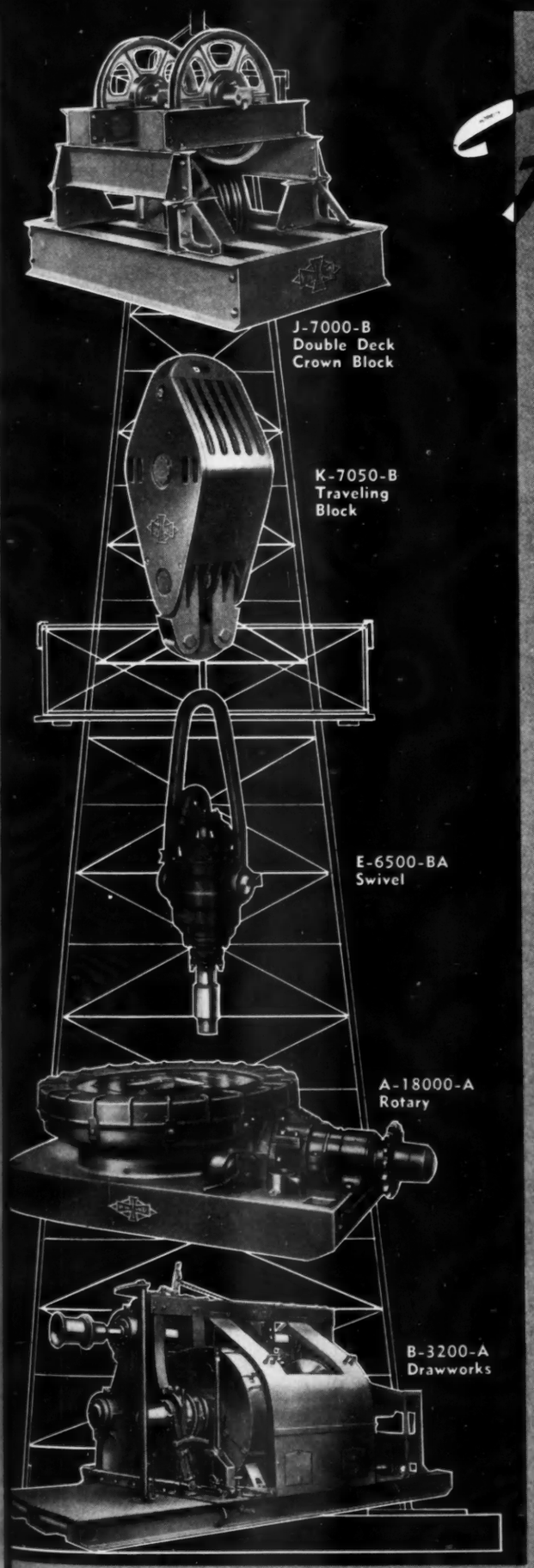
The company last fall started to deepen Bateson 1, an old well originally completed in 1939 at 3817 feet (plugged back from 4454 feet) for a 60-barrel Monroe dolomite well. Objective was the Niagaran and Trenton limestones and the St. Peter sandstone, expected at 9000 feet or more. (THE OIL WEEKLY, December 9, 1940.)

A blowout November 29 at 7776 feet in an unclassified formation of the Silurian cleaned the hole of mud. Decision was reached 12 hours following the blowout to back off on the drill pipe below the first joint and shut the well in at the master gate. The full string was set on bottom. This procedure was followed when it became evident that the volume of gas and pressures encountered could not be safely coped with in the face of control equipment then on the well. As the hole cleaned gas velocity increased with salt, sand and water setting up a cutting action to a point that it was feared that the drill pipe would be cut through within 24 hours and let loose to corkscrew in the hole. At that time only a single 3000-pound blowout preventer was included in the control hookup.

Tests made just prior to the blowout showed casing pressures at approximately 3200 pounds and gas volume between 12 and 18 million feet per day. Controls to withstand these pressures were enroute to the lease when the blowout developed. However, connections gave away December 8 with the well firing.

Parker Drilling Company of Tulsa, contractors, brought in a complete new rotary rig and a new 136-foot derrick was built to replace the fire wrecked equipment. To handle new twin 8000-pound test blowout preventers and a high-pressure drilling head, an eastern manufacturer fabricated its first 14-foot substructure. The high substructure permitted installation of the blowout preventers and drilling head between ground and derrick





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A section of recovered drill pipe showing the complete break at the box. Sulphur gas and brine driven in by high pressures was believed responsible for breakup in pipe.

floor thereby providing greater accessibility to working valves and lines. The control unit is steam powered for operation with auxiliary manual controls. The lease site itself "went out" in mid-December to a point that it was necessary not only to carry out extensive filling operations with gravel and cinders but also to plank the 350-foot road entrance and the entire working side of the derrick.

To speed up work, valves and fittings on several occasions were routed by air, and in one instance a special plane was chartered to make a fast delivery from Texas. In another case, 8000 feet of 4½-inch drill pipe was trucked from Houston, probably a record emergency distance movement by motor transport for such equipment.

Before recovery operations were started production tests for gas and distillate were conducted for several days. Bled through a ¼-inch choke, Bateson 1 gauged 4,580,000 feet of gas at pressures ranging from 900 to 1150 pounds. This gas, when diverted through a conventional 5 x 15 separator, stripped off as high as 84 barrels of 71.3-gravity distillate in 24 hours, the first condensate production in the state's history. Gas and distillate tests were carried on against different pressures and with various sized chokes until fishing operations started January 17. Since then, gas has been bled off at intervals.

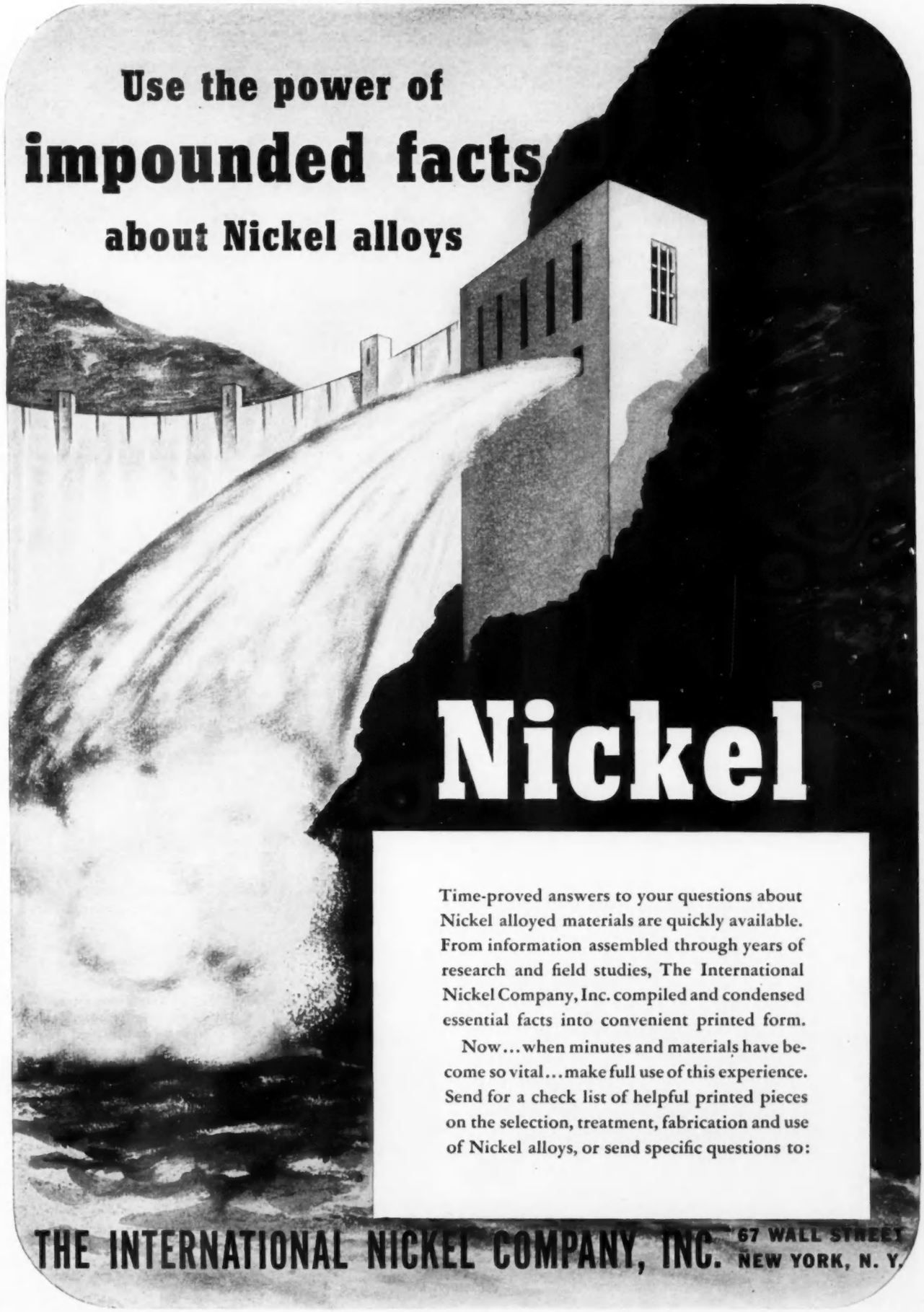
Nine-inch casing had been set and cemented at 3625 feet through the old Monroe lime pay zone. The original hole, prior to deepening operations, had been drilled with cable tools to 4454 feet into an oil-water zone of the Sylvania. This formation was reopened by the blowout, letting in a large flow of water at 4174-77, 4303-09 and 4360-4370 feet, besides a small quantity of oil and gas. The blowout also opened up numerous gas zones in the thick Salina salt section. Top of the salt had been logged at 5480 feet, and the last samples recovered before the final blowout at 7776 feet still showed salt. A flow of gas gauged at 12 million feet, logged at 7368 feet, set up a semi-blowout. Weight of the drilling mud had been stepped up to 14 pounds in an attempt to handle the gas pockets in the salt and overcome high pressures of more than 3200 pounds.

This broken salt section was responsible for the brine flow, which in combination with the sulphur and water constituted such a major portion of the troubles encountered.

After establishing that the pipe was severely bridged, 3125 feet was recovered in sections, following repeated washing and knocking out of salt and iron bridges with a 2⅜-inch string of drill pipe. The second joint from the top showed a break and was re-tooled with a new joint in the hole. Later recovery operations indicated that replacing of the damaged second joint may also have broken out or loosened up several other joints in the upper 4400 feet of pipe.

At 4407 feet a cutter was run on the 2⅜-inch drill pipe, and an inside cut made at 5420 feet. Full recovery was obtained on this cut and again on a second cut at 6432 feet. Preliminary attempts to get a hold on the pipe at 6432 feet failed, due it is thought to be the pipe being kicked over into a cavity. When an overshot grip was finally made, the pipe was found to be solidly bridged. Obstructions were then drilled out, with a third cut completed at 7196 feet. This 761-foot section parted the second joint below the overshot, and even attempts to get this joint out failed. Satisfied that the remaining pipe offered little chance for recovery, decision was reached March 10 to sidetrack.

First plans to kill the well by circulating 14-pound mud and then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set a cement plug between 6200 and 6400 feet had to be altered when returns started between the 9-inch and 13-inch casing string, indicating a previously unsuspected break in the 9-inch.

In a spot-plug operation, a bridge was made at 6375 feet with 200 sacks of cement giving a 57-foot plug to 6432 feet, extending into the top of the lost string of pipe. This was followed with 200 sacks more that brought the hole up 49 feet and with a third run of 300 sacks that brought the plug to 6228 feet. This was drilled back to 6265 feet for the point of takeoff with a whipstock. The break in the 9-inch was then cemented off.

Setting of the plug for the whipstock provided comparatively accurate data on the extent of the cavity channeling in the salt section of the well. Engineers had figured that a normal 8¾-inch rock-bit-drilled hole would give the desired bridge thickness with about one third the cement that had to be used.

Loading of the full hole to 6228 feet with drilling mud provided another good check on the extent of cavity. Instead of the normal 509 barrels of mud it actually required 1010 barrels. As the top 3625 feet of the hole is cased, the throw out in the salt section was estimated to average 29¼ inches over the normal 9-10 with an 8¾-inch rock bit.

Conditioning of mud for the hole in itself proved a major task. Industrial mud was built up to 14 pounds and circulated and while it provided control over gas and water from the well it was found too heavy to handle. The cavities slowed up normal velocity and provided handy traps for mud to settle into with the result that the new working string of drill pipe was temporarily fro[illegible]p. It was washed free and circulation re-established.

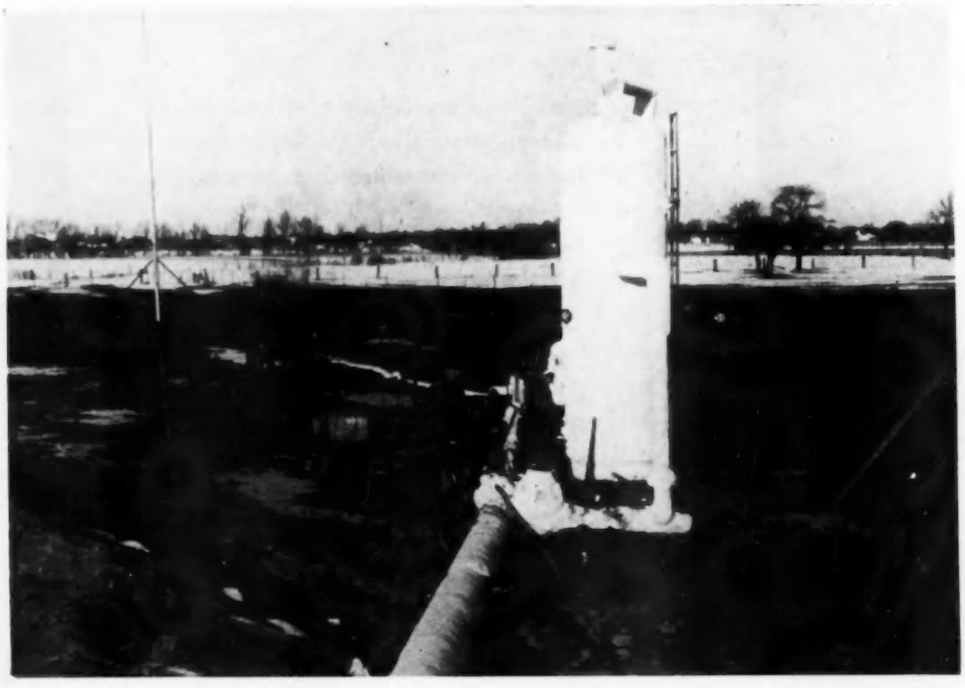
An attempt to use brine for a circulating medium was made but it too had to be discarded because of the amount of water flowing from the well. The overflow was too much and could not be handled with reserve pits.

Now mud has been conditioned to 12.2 pounds using salt water from the well and a combination of special industrial muds. This combination appeared to be working satisfactorily in so far as preventing fast settling but it had not entirely eliminated periodic kicking and break through of gas. Breaking through of the gas indicated that the hole at its plug-back depth still has one or several high pressure zones carrying comparatively low volume of gas. Some gas may be coming around the plug.

A 7½-inch O.D. 10-foot whipstock was set on bottom March 26 at 6265 feet and drilled off with a 5⅜-inch bit to 6277 feet. Reamed with an 8¾-inch pilot bit and surveyed with a directional camera the hole failed to show any deviation. The whipstock was to be rerun. Operators desire to obtain a directional deviation of about 5½ feet at 6450 feet or a 3 degree angle at the whipstock take off. In the initial directional survey taken at 6265 feet before the whipstock was set the hole showed less than ¾ of a degree deviation.

Bateson is the first attempted deep well in the Michigan basin and on its completion are hinged in no small measure starting of two or more other deep wells this year. The gas-distillate pay at 7776 feet without question offers encouragement for deeper beds in Michigan but it is not entirely adequate proof. Production is from an unclassified bed of the predominately salt zones of the Salina. Many geologists believe that the high pressures and low volume of gas is indicative of salt production.

The blowout and fire drastically changed the picture of a deep test in Michigan from the financial angle. The investment dwarfs everything ever laid on the line in Michigan, where $6,500 to $12,500 is fast company for a wildcat test. So far Gulf Refining Company has showed no sign of weakening in its original program to reach 9000 feet or better with the well. In fact the company has been taking up several thousand acres of new leases on trend with the deep test and bought in on spreads at a state lease sale where deep wells by other companies are being contemplated.



Gas from a pay at 7776 feet, bottom hole, during a 15-day test period stripped up to 80 barrels a day of 71.3-gravity distillate, first in Michigan. Three standpipes through which gas was vented and burned to keep pressures bled down kept snow melted from the 40-acre field in the foreground. Icing of lead lines and separator was something new for Michigan.

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FOR EVERY PURPOSE

Relationship of Drilling Contractor to Oil Operator

The contractor must have his costs and a reasonable profit to remain in business

By ARCH ROWAN*
Rowan Drilling Company

THE relationship of the drilling contractor to the operator is substantially that of the employe to the employer. Practically all drilling contracts are made on the basis of what is known as a footage contract. The contractor makes the hole and performs the labor necessary to set the pipe and complete the well and the operator furnishes the materials and special services, such as cementing, electrical logging, et cetera.

The two principal considerations in the mind of the operator, I presume, in this type of contract, are the price per foot to be charged by the contractor and the workmanship which the contractor is able to give. This last, of course, is based upon his past performances; in other words, his reputation as a contractor, and this reputation or this ability to turn out a finished product in a first-class workmanlike manner is entirely dependent upon the experience, ability, and knowledge of the contractor, his toolpushers, drillers, and other employes. Certainly price should not be the all-governing consideration in the selection of a drilling contractor to perform an intricate engineering feat, such as drilling and completing a deep hole for the production of oil. An oil well is a structure built to last for many years, and the workmanship which is put in it has a bearing on the life and efficiency of the operation of this structure.

In considering the price which is to be paid a contractor for his work, it should be borne in mind that the contractor has no control over the price which he pays for supplies, such as wire lines, drill pipe, drilling bits, and other necessary repairs to his equipment. His only control over cost is in the wages which he pays his employes, and the efficiency of these employes in the conduct of their work so as not to abuse or tear up his equipment, but instead to operate same in the most economical way possible. The care and selection of these employes is of the utmost importance, not only to the operator, but also to the contractor. These employes, including the toolpusher, are really the employes of the operator, since they are taking orders from the operator, while possibly not directly but through the contractor, and the efficient execution of their work is of prime importance to the operator.

Must Have Profit

The cost of drilling a well plus a fair and reasonable profit is all that the contractor is interested in. He must demand this and get it or he will not long last in business. The same applies to the conduct of the operations of the operator. He cannot long continue to lose and still stay in business. The cost of drilling a well depends to a great extent upon the cooperation which the contractor receives from the operator. Time is money, and many unnecessary delays in the drilling of a well caused by the operator added up at the completion of the well make a sizeable cost in the contractor's computing of his total cost. There is a tendency on the part of some employes of the operating company to feel that a contract having been let to a contractor and his duties and obligations having been set out in this contract, the problem is solely the contractor's from then on out, and any delays or extra cost which might be added to the cost of the drilling of the well are not out of the pocket of the operator, since the contract price has been established and the contract signed. This is wholly erroneous as nearly all first-class contractors today keep good cost statements and the price which they bid or ask for the drilling of a well is based upon the average cost of operations in that district, plus a reasonable margin of profit. If the cost of these operations go up due to lack of cooperation on the part of the employes of the operator, then the contract price must necessarily go up, and in the end, these delays are being paid for by the operator. Most of the delays are not deliberate on the part of the representative of the operator but are due to lack of forethought in planning and cooperating with the contractor. Such planning and cooperation, in my opinion, is essential to the efficiency of the drilling contractor and his organization.

Hazardous Operations

There are a great many representatives of operators who feel that the hazard of drilling an oil well having been assumed by the contractor, it is of no consequence to the operator, and they sometimes require the contractor to do and perform very hazardous operations with the thought in mind that if anything should happen, it would be nothing out of the pocket of the operator. Such, of course, is not the case. Again, if the contractor gets into trouble on any particular well and should happen to take a loss of several thousand dollars, this cost will be reflected in the average which he computes in that district in setting his contract price for the future. Therefore, in my opinion, it should be the duty of the operator to weigh carefully the results which he is trying to obtain from some operations which the contractor has warned him might be extremely hazardous. If the operation is of the utmost

* Presented before the Houston Chapter of the American Petroleum Institute Division of Production on March 24, 1941.

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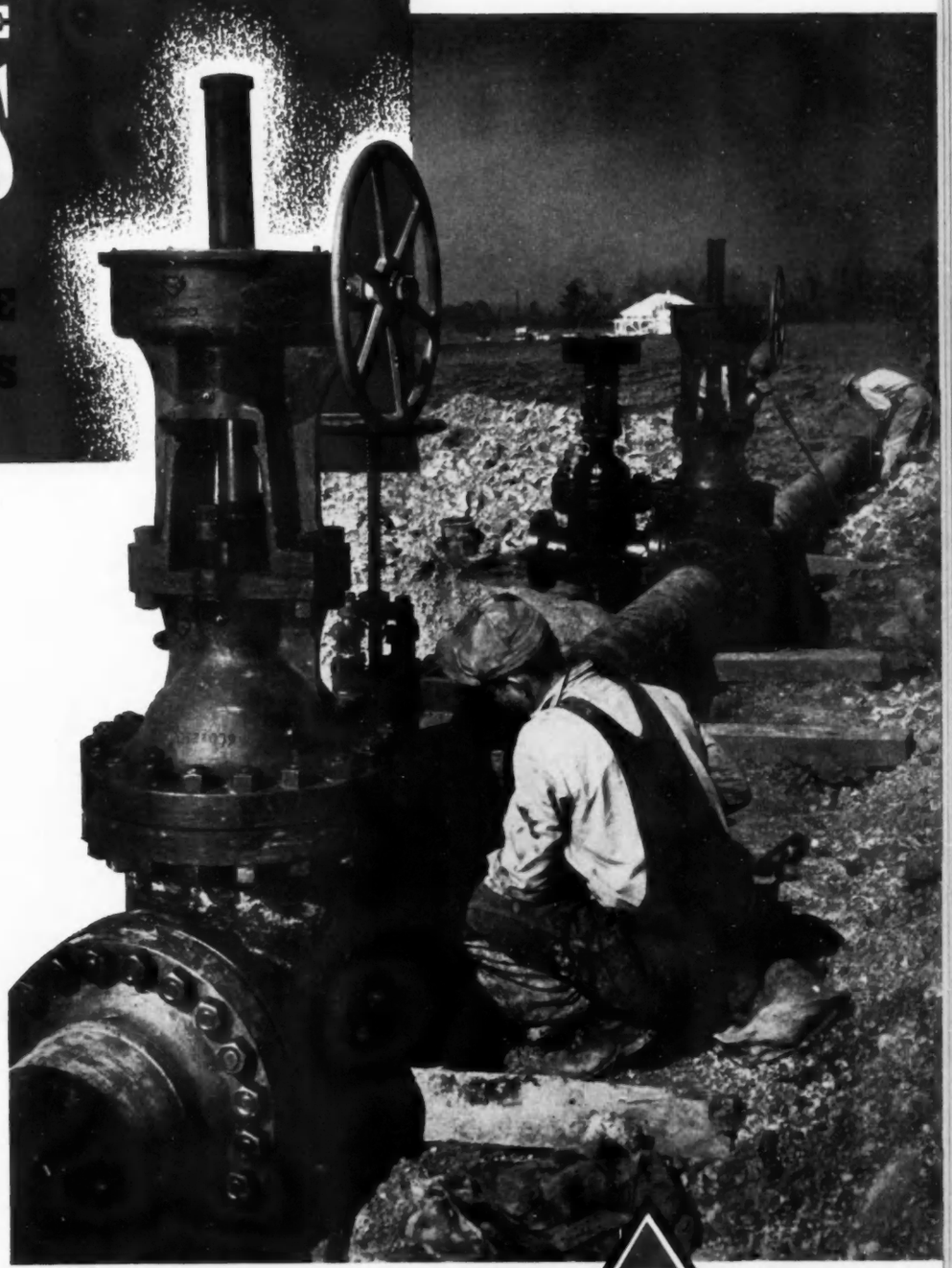

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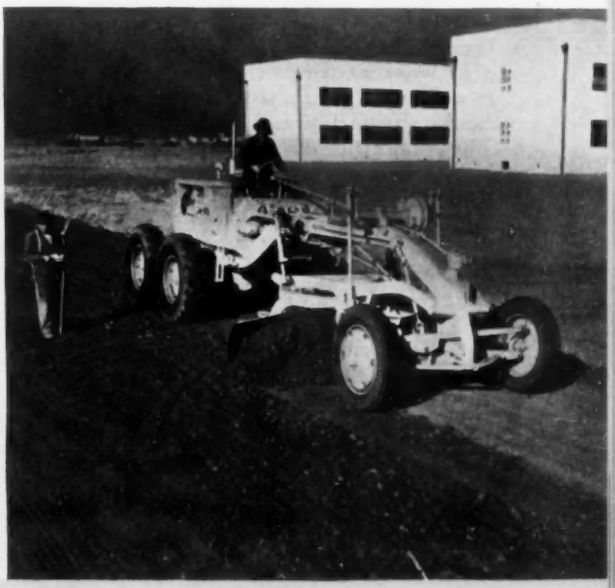
(LOWER LEFT) • *Huge scraper-units hasten the building of California's Camp Callan.*

(LOWER RIGHT) • *An air station will have fast roads, smooth runways, because of this machine.*



importance, of course it should be performed by the contractor with the greatest care, regardless of the hazard. It should always be borne in mind that the contractor and his employes are human, the same as the employes of the operator, and cannot do the impossible. He can only do that which is good, sound practice, and good, sound practice is dictated by past experience. To ask him to experiment or attempt to do the impossible is unfair and will be reflected in the costs which he has to justify in setting his price for the work which he is asked to perform.

Need Continuous Operation

The cost of operating a drilling contracting company is largely determined by the contractor's continuity of operations. This can best be explained by taking the history of the United States Steel Corporation and comparing their earnings with their percentage of operations. It is a well known fact that the steel corporation has to operate at more than 35 percent of its capacity of plant operation before it can make a profit. Anything below this creates a loss; anything above this creates or makes a profit. In the operation of drilling rigs, if a contractor can operate his drilling rigs in a given field on a continuous basis, i.e., locations waiting before the completion of the well which he is then working on, his costs will be materially less than if each well is finished and then a period of time elapses between the commencement of another well. Likewise, if a contractor can operate two or more rigs in a given field, his operating costs are lessened. In both of these instances, the contractor has, or should pass these savings on to the operator by reducing the contract price per foot. Since the operator, as stated above, is presumably interested in cost and also workmanship, this last phase is one which should be given particular attention by the operator. The operator should so plan his work, if possible, that this continuity of operations may be maintained and if possible, where more than one drilling rig is operated in a district, the contracts should be given to one contractor until he has an efficient number of rigs in that district. This does not mean that one contractor should be permitted to do all the work in one field, but the efficient operations of the contractor should be considered, and if possible, he should be permitted to operate enough drilling rigs in one district so as to gain this maximum efficiency. There are many good drilling contractors in the oil industry, and in my opinion they are working hard to improve the technique of drilling and are trying to give the service which the operator demands and is justly entitled to. It is only possible to get this by maintaining a high-class, experienced personnel, and it is only possible to maintain this high-class, efficient personnel by paying fair and adequate wages to the men, therefore, in the selection of a contractor, price should not be the sole and governing motive. The contractor's equipment, his personnel, and his own experience should be considered, if the operator expects first-class workmanship.

The function of the contractor is to perform the work required by the operator in a first class workmanlike manner and at a cost comparable with that of the operator if he ran his own tools, taking into consideration, of course, all elements of such cost. These should include proper charges for depreciation, obsolescence, overhead and supervision, and also camp facilities for his employes, annuities, insurance, etc., and any other benefits given his employes, and hazard. With the proper cooperation between contractor and operator, this can be done, the resulting advantage to operator being the elimination of invested capital and decrease in number of employes and possible labor troubles. The contractor, being a small organization, can very likely run his organization with less likelihood of labor trouble than the operator because of the personal contact with his men. Practically every man working for our organization addresses me by my first name, and there is a bond of comradeship between most contractors and their men brought about by enduring the same hardships which is of inestimable value in the relations of employer and employe.

The operator, of course, in computing the cost of his own company tools, should charge into the cost of the drilling such items as the contractor would charge toward the drilling of a contract well. It is my understanding that some companies have special accounts where they charge such items as lost holes, bad blowouts, and fishing jobs, and then at the end of the year they apportion these to all of the drilling costs on a pro rata basis. It is probably for this or other accounting reasons that many times the first cost chargeable to a well by operator is not the accurate or final cost which will be charged against that well which may have been drilled by company tools.

One other phase of the relations between the contractor and the operator is the tendency on the part of some operators to erroneously put out information to other operators regarding the cost of operating their company tools. I do not mean by this that there is a deliberate misrepresentation. I think it is human for all of us to try to impress our fellow man with the fact that we run our business with a maximum of efficiency, and possibly for this reason, or other reasons, in discussing the costs between operators, one operator may pick out an extremely low cost well and base his statement for field operations on this particular well, whereas it does not reflect the average cost of wells in that district. If this is done, and the other operator who happens to receive this information is doing all of his work by contract, he naturally seeks to find out why his wells are costing more money than his competitor who is using company tools. The cost of pipe and other supplies and services being fixed, he has only one way to reduce his cost and that is to reduce the price which he is paying his drilling contractor.

In asking for bids, it would be advantageous from the operator's standpoint to put out a complete specification of the work to be done and the services to be performed and the services and materials to be furnished by the contractor so that each contractor could bid on an exact, identical set of specifications. This, of course, would be the procedure if a contractor were going to bid on a building. It also seems to me that the practice of asking the contractor to furnish a maximum amount of mud or specified number of free cores is a costly procedure from the standpoint of the operator. If the contractor is experienced and knows his costs, he will add this in to the footage price which he bids and the operator in reality, will be paying for these services even though they may be hidden in the footage price, consequently, if fewer cores are taken than those set out as free, or a less amount of mud is used than that called for in the bid, the contractor will profit at the expense of the operator.

"The boss read the ad for Wickwire Rope daring us to try it on our toughest job and then compare Wickwire Rope with the rope we were using.

I said it was the usual advertising bunk.

But the boss is a tough guy who will always take a chance when he thinks he is going to win, so in came the rope and I put it on. When it got to the time when we usually change rope, that Wickwire Rope was going strong. Then I got interested because changing rope ties up equipment and is a dirty job. That's months ago and no sign of change yet. That Wickwire Rope is some rope!"

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Practical Operating Hints for

1. PUMPING HOOKUP

Rod Lines Suspended Over Stream Beds With A-Frames and Cable

Rod lines are run over stream beds efficiently by employing these double A-frames.

A PROBLEM often confronting field men involves an economic and permanent installation of rod line equipment. In many areas, dry stream beds are difficult to cross with rod line. Bottoms of such channels are usually soft and too deep for firmly setting posts. When flush with rain, the bottoms work like quicksand to undermine concrete foundations, or the rushing water carries debris in volume sufficient to impair above-surface installations.

Although the problem can often be solved by reinforcing, or by heavy suspensions, these methods are frequently uneconomic. In the lime area west of Stinnett, Texas Panhandle, production men installed a long span, both economically and permanently overcoming the difficulty.

Double A-frames of six-inch used pipe were set in concrete, being joined across the top with eight-inch. The width of the stream bed required that these frames be set 200 feet apart. At the top center of each A-frame, a sheave was welded over which a 7/8-inch line was thrown. The arc provided by the sheave obviated a sharp bend in the cable, at the same time holding it centered over the top of the beam. Deadmen were set on the off-stream side of the two A-frames to support the cable and its load.

Pull rod was fed to the suspension through modified catenary. Pull rod was taken off the ground posts beneath each frame, and carried over the bed of the stream on seven under-supports, suspended from the cable. The slings, evenly spaced along the cable and fixed in position with wire line clips, were made of four pieces of strap iron, 3/8 x 1½ inch. Each suspension was made in the form of a V, the upper ends of which were conformable with the curve of the supporting cable, and the lower ends to points in line with the tops of rod line posts on each side of the stream. Protected rollers carry the rod through acute angles of the suspensions.

2. ENGINE HOOKUP

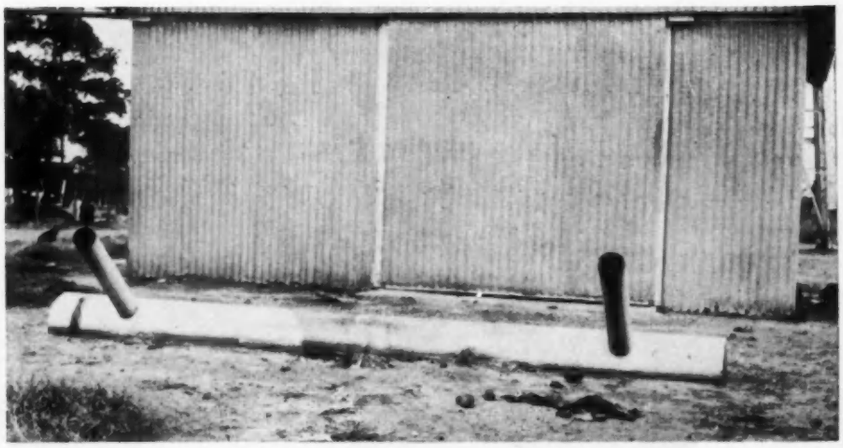
Special Muffler Curbs Exhaust Noise

IN built-up sections, the irregular exhaust of a single-cylinder pumping engine is objectionable, and varied expedients have been devised to reduce or eliminate the trouble.

One producer brings the exhaust from the engine out under the pump house floor in a four-inch line, welded into the center of a sixteen-foot length of 14-inch pipe, with the ends closed with welded-in discs. Two feet from each end of the 14-inch section, two 4-inch exhaust legs are welded, projecting three feet from the shell and perpendicular to it and about 45 degrees from the ground.

The exhaust impulse entering the big pipe divides, travels to the closed-in ends, and is reflected back to find gradual release through the two legs. By balancing this sound wave travel within the big pipe and splitting it two ways, the exhaust gases eventually emerging from the two short pipes are muffled to little more than a hollow cough.

Cooling water run into the ex-



Noise of a single-cylinder pumping engine is curbed efficiently by this muffler.

THE PRODUCTION MAN . . .

THE practical operating hints for the drilling rig and production man, appearing in these features each week, are secured from oil fields everywhere and offer suggestions that will help to improve field efficiency and safety. The items give an excellent picture of the remarkable ingenuity being exercised by the operating divisions of the industry. Contributions to these features will be paid for at the rate of $5 for each illustrated item accepted. Address contributions to "The Editor, THE OIL WEEKLY, Houston."

haust line may eventually build up within the 14-inch drum until it reaches the level of the inlet, but any water above that amount is agitated, blown to spray, and carried through the two outlets to further silence the sound.

3. GADGETS

Convenient Stand Aids Lease Worker

TO aid the pumpers and service men on wells equipped with large pumping jacks, one company constructs light sturdy stands that are left at each well to be used in step-ladder fashion in reaching some of the out-of-the-way points of the unit or engine that require servicing.

The stands consist of two broad non-skid steel steps, 18x24 inches, and are 14 and 28 inches, respectively, above ground level. They are welded to a sturdy framework of sucker-rod material. A hand-rail of the same material extends 28 inches above the top step along the back and one side.

Stand of steel plates and sucker-rod material serves pumper in many ways.

4. PUMPING PROBLEMS

Flywheel Minimizes Rod Parting

IN attempting to solve more than normal rod-parting trouble on a well, one company varied its hook-up considerably.

The well was being pumped with a standard end unit, and despite numerous efforts at counterbalancing, none seemed to give as good results as that obtained by use of a pair of heavy flywheels mounted on an extension of one of the power counter-shafts of the pumping motor.

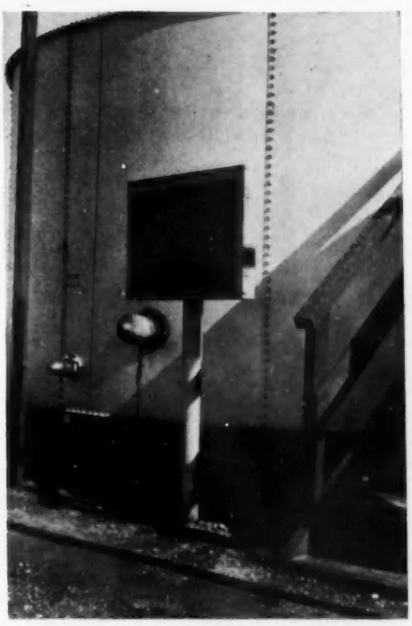
Smoother pumping strokes and a fewer number of rod jobs resulted from the installation of this flywheel unit. Excessively high power peaks also were substantially reduced.

5. GAUGING

Protected Blackboard For Special Orders

TO make certain that gaugers, pumpers and other field men thoroughly understand gauging and other operating procedures on wells under test or special gauge, one company installs at each tank battery a special glass-encased blackboard on which instructions may be written.

Measuring approximately 30 x 24 inches, a wood case is fitted with a latched, weather-proof, side-opening glass door. The inside back of the case is smoothed and covered with several coats of velvet black paint to make a surface on which common white chalk can be used.



This glass-covered blackboard relays special orders to gaugers and pumpers.

Mounted on a 5-foot standard of 3-inch pipe, it is erected near the stairway leading to the top of the battery and can be readily seen by the field man.

Pumpers about to finish their tour can relay important field instructions, oil-shipping notes for that particular battery and other information to the new pumper coming on duty, by the use of this bulletin board.

Heavy flywheels on a power counter-shaft minimize rod-parting trouble.

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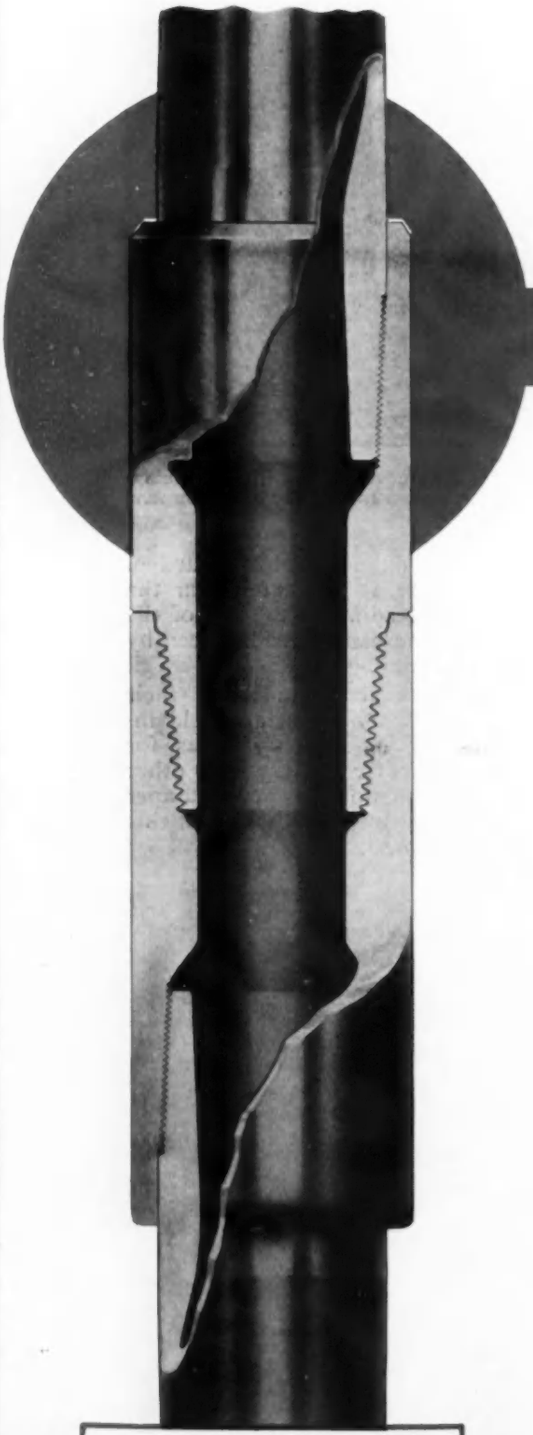

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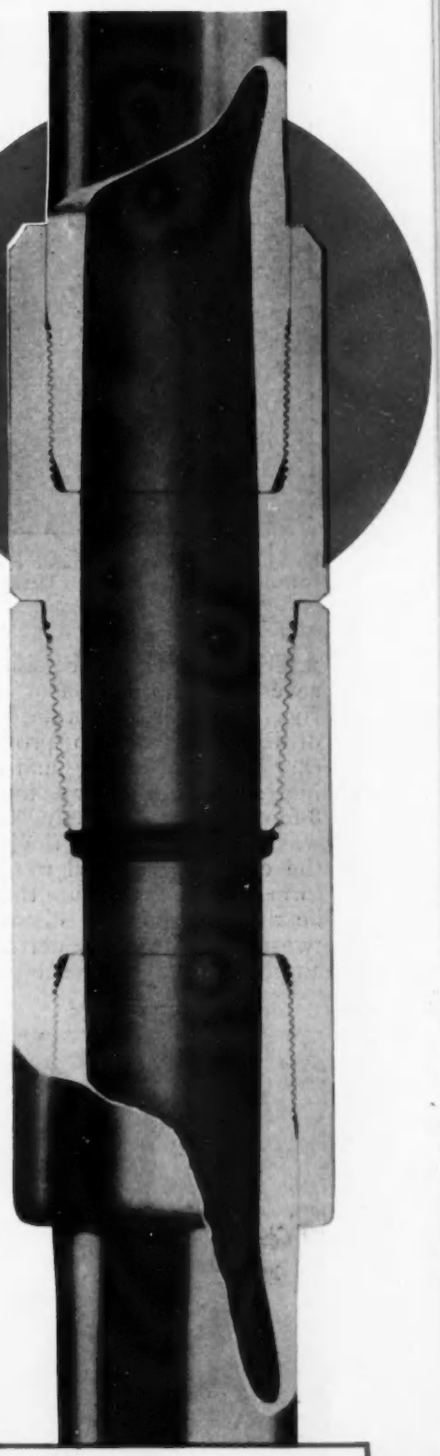

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Practical Operating Hints for

1. MATERIALS HANDLING

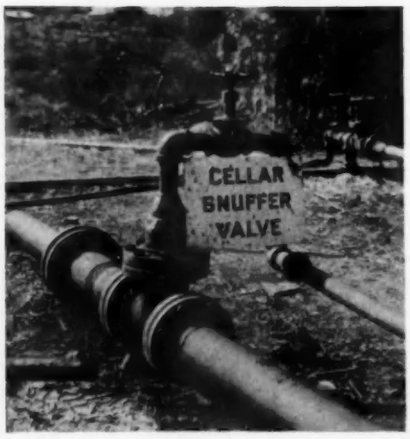
Chute Aids in Moving Heavy Objects From Derrick Floor to Sub-Platform

By means of this chute made from 20-inch casing, small heavy tools may be moved conveniently from a high derrick floor to a platform at the level of a truck bed.

RELATIVE inaccessibility of several of its high-floor drilling rigs to the road, prompted one drilling company to provide an easy means of loading and unloading small but heavy tools. An 8-foot section of 20-inch casing was cut in half lengthwise, and the ends tapered and rounded to form a convenient chute that could be used to span the distance between the edge of the derrick floor and the edge of a sub-platform which was at the level of the average truck-bed.

Four well-braced, 2-inch pipe legs were welded to the lower side of the chute to form a sturdy support. A single bolt through the side of the trough at the other end, anchored that end to one of the vertical members of the doorway of the derrick and prevented any possible side motion while it was in use.

Heavy objects such as new and worn bits, tool joints, subs and other awkwardly handled tools and pieces of equipment may be handled with less effort and greater safety, as they usually can be slid up or down the chute with a hand-rope, or by use of a snatch block and take-off from the cathead.



Tee in the main steam line provides steam for fighting a fire in cellar.

2. SAFETY

Steam Provides Cellar Fire Protection

THE ever-present danger of fire starting in an oil-filled cellar, or beneath the wooden floor of a well while it is being drilled in or swabbed in for production, may be minimized by placing a tee in the main steam line leading from the boilers.

From a take-off swaged down to a 2-inch gate a short distance from the derrick, the 2-inch line is run to the cellar of the well. A conspicuous sign is hung near the gate so that in the event of a fire, and possible confusion, no difficulty need be experienced in locating the proper valve and snuffing out the fire if it has not yet progressed very far.

Should the well blow out of control, filling the surrounding area with an explosive or inflammable mixture of gas or oil and air, a similar valve near the boiler setting, taken off from the downstream side of the boilers, can be opened to flood the boiler fires with steam through a nozzle projecting into the fire box.

3. WATER PUMPING

Mobile Unit Utilizes Truck Power Plant

A PORTABLE power unit is used to pump water for shallow-well drilling by Redco Exploration Company, Houston. A centrifugal pump has been installed on the chassis of a truck and a hook-up effected whereby the motor provides the power for operating the equipment.

The body and seat behind the dash was removed, clearing the back portion of the truck down to the chassis, and upon which was mounted a regular centrifugal pump. The unit was mounted so

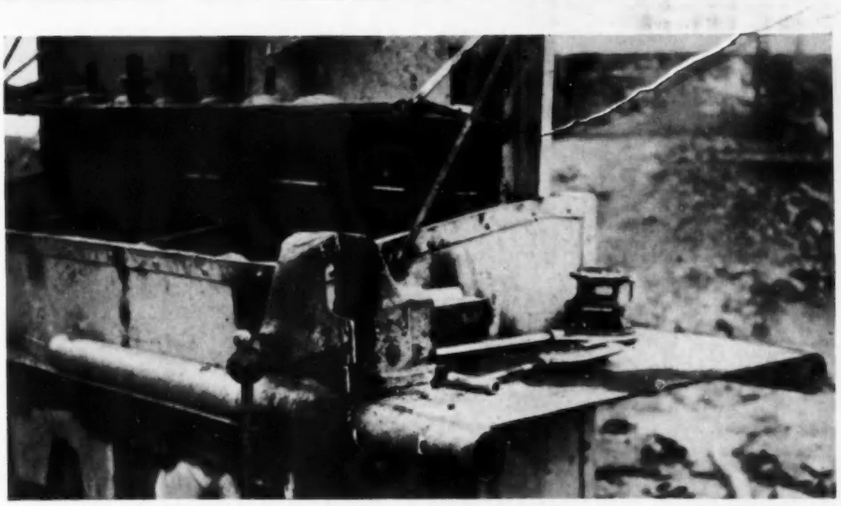
The power for this centrifugal water pump is provided by the truck motor.

that the shaft upon which the pulley or gear is located was set immediately over the back end of the truck's transmission. This placed the suction end of the pump in the back portion of the truck.

The drive shaft connecting the transmission and differential of the truck was disconnected. Gears were placed on the end of the pump, immediately behind the transmission, and the two gears were connected by a chain. A housing was built over the gears atop the chassis as a safety measure.

A hose was connected at the suction end of the pump, and another hose at the outlet. A swedge nipple is used to form an easy fill at the priming point on the unit.

As only a small amount of power is required to operate the pump, the engine easily handles the job in high gear. The pump is towed to location by another truck. Its lightness, and mounting on pneumatic-tired wheels, makes it possible to move the unit with little effort.



This work bench, bolted to a tool box, may be detached when changing locations.

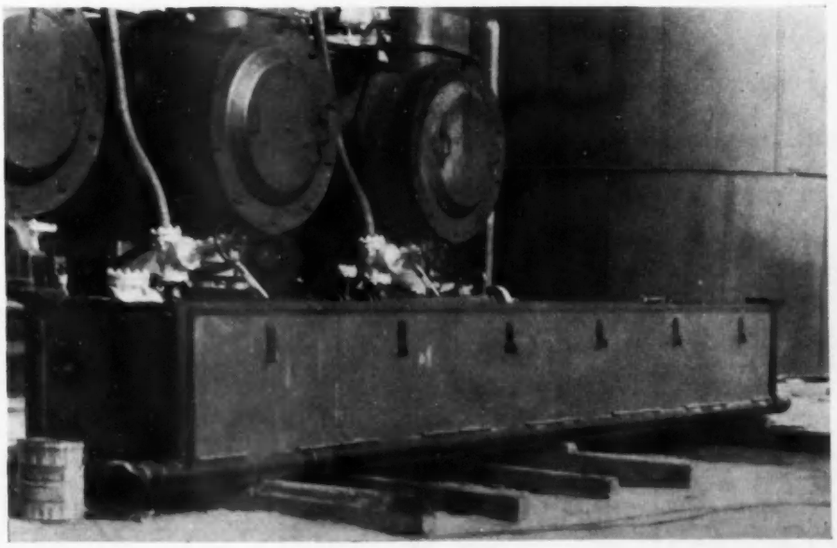
4. GADGETS

Work Bench Fastens On Tool Box

A PRACTICAL detachable work bench bolted to the end of a heavy reinforced sheet steel tool box is being used by one company for the convenience of the mechanics working on the pumps or other drilling equipment.

Lengths of 2-inch angle iron welded along the front and back sides of the tool box provide the supports for two 4½-foot lengths of 2-inch pipe that extend some two feet out beyond the end of the box. A sheet of ⅜-inch steel plate extending across and welded to these projecting pipe ends forms a solid bench on which can be mounted a large vise equipped with pipe jaws, and which aids in performing many miscellaneous threading and assembly jobs. Bolts anchor the other ends of each pipe to the supporting angle iron and allow the entire bench to quickly be removed when moving to another location.

An accessory built into the tool box is a convenient hinged steel shelf on the inside of the cover to accommodate an orderly assortment of small pipe nipples, fittings and spare parts. When the box is being closed for moving, the shelf is cleared and folded back flat against the cover.



This tool box, with several compartments, features a skid-base and work-bench top.

5. TOOL CARE

Cabinet Has Several Compartments

A SERVICEABLE and practical skid-base tool cabinet with a work bench top may be made with four-inch pipe for skids and end risers, and smaller pipe for stringers at the top. As many separate compartments as desired may be arranged for supplies and tools by making doors of sheet metal with hinges at the bottom. Each door may be fitted with a combination latch and locking device by using a pin passing through the top of the door to which the handle and locking device is attached on the outside, and a retaining latch on the inside. Lugs welded to each door with holes to match holes in the handles, all in exact line, permit passing a long rod to lock the compartments with a single lock. A hole in one of the standards permits slipping the locking rod into the stringer at the top so that it will not be misplaced.

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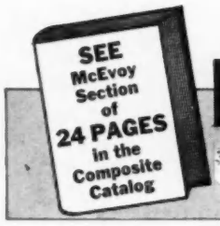

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HIGHLIGHTS IN THE WEEK'S NEWS

Courts

Predict Quick Settlement of District of Columbia Suit

Quick settlement of the government's suit against 22 major oil companies and their subsidiaries and affiliates, filed in the District of Columbia federal court last September 30, was indicated last week following conferences between counsel for the defendants and officials of the Department of Justice.

The settlement, reportedly in the final stages of development, will not be by the more familiar consent decree but by an infrequently resorted to "injunctive decree," under which, it was explained, it will not be necessary for the companies to agree to any stipulation admitting that they had engaged in any of the practices alleged by the government.

Under an injunctive decree, the defendants would be prohibited from resorting to certain practices named therein, regardless of whether they actually ever had employed them. Should any of the defendants violate the injunction, it would, of course, be contempt of court for which they could be prosecuted.

Under the plan reportedly being worked out, the Department of Justice will submit the injunctive decree to the court. The defendants will not contest it and, accordingly, the government will not be required to show cause. In this way, the companies will be saved from the necessity of either acknowledging that they had done any of the things alleged in the department's bill of complaint or of proving that they had not done them.

A quick disposition of the suit was sought by both the government and the companies involved. Assistant Attorney General Thurman Arnold sought not only to save time and money for both sides, but was represented also as anxious to show that the Department of Justice was in a position to deal with any monopolistic situations which might arise, to substantiate his contentions as a member of the Temporary National Economic Committee that there was no need for legislation dealing with the oil industry, which had been the subject of long hearings during the committee's investigation.

On the other hand, it is said, the companies were desirous of a prompt disposition of the suit as another shot at the rapidly foundering effort to secure federal control of the industry.

Details Still Lacking

In advance of the actual consummation of negotiations, neither department officials nor oil company representatives were willing to reveal just what practices will be banned under the projected injunctive decree.

In its original bill of complaint, considerably modified as a result of opposition of the National Defense Advisory Commission to any suggestion of divorce, which it was feared would throw the industry into disorganization with a consequent reaction on the defense program, the government charged the oil companies and the American Petroleum Institute with fixing of prices to be paid for crude oil purchased from independent producers and to be charged for crude oil sold to independent refiners; with conspiring to restrict the production of crude and the manufacture of refined products, and with having sought to restrict the marketing of petroleum products by various practices.

Companies owning or controlling pipe lines were charged with having used their facilities to the disadvantage of independent interests. The oil companies also were charged with having conspired to cause the railroads to maintain rates favorable to them and unfavorable to independent competitors, and with having acquired a dominant control over tankers, tank cars and other transportation facilities.

The complaint sought an injunction against continuance of these and other named practices, and also sought the dissolution of the American Petroleum Institute, together with such general relief with respect to the organization, functioning and operation of the defendants as the court might deem proper.

Prior to filing the suit, the defense commission warned that too drastic a reorganization of the industry might have adverse effects upon the defense program, pointing out that the oil companies voluntarily were cooperating in every way with the government.

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Washington

Cole Committee to Attend Compact Meeting April 14

Members of the Cole subcommittee of the House Interstate and Foreign Commerce Committee will attend the quarterly meeting of the Interstate Oil Compact Commission at New Orleans April 14, it was announced last week by Representative William P. Cole, Jr., chairman.

Following that meeting, the group on April 15 and 16 will inspect the Louisiana fields and refineries in the Baton Rouge area, and on April 18 and 19 will survey producing and refining facilities in the Shreveport area and in Arkansas and Mississippi. The group then is expected to return to Washington.

No Control Endorsement Indicated by Cole Group

Oil and railroad companies last week aired their controversy over the proposed southeastern gasoline pipe lines before the Cole subcommittee of the House Interstate and Foreign Commerce Committee, with the former asking for congressional legislation overriding restrictions of Georgia and South Carolina laws on condemnation.

As the hearings concluded, there were indications that the report of the subcommittee would recommend legislation to require the southeastern railroads to allow the pipe lines to cross their right-of-way.

There was, however, no intimation, whether the recommendation would be limited to the Southeastern and Plantation projects or made general, in the latter event paving the way for any additional pipe lines that might be projected, but probably requiring that such lines secure a certificate of convenience and necessity from the Interstate Commerce Commission before beginning construction.

It was revealed by William P. Cole, committee chairman, that the subcommittee may not be able to complete its final report for submission to Congress by May 1, the date set, and that it may be necessary to ask the house for a short extension of time.

The only recommendation expected to be made with respect to the oil industry as a whole will be that provision be made for federal representation on the compact commission, as was suggested during the hearings which were concluded last week.

This would be secured through an amendment to the legislation giving congressional sanction to the agreement, which expires in August.

There is no indication that the subcommittee will give its approval to suggestions for federal control of the industry. All chances of such action was seen as dissipated after Dr. R. E. Wilson, of the Office of Production Management, gave the industry a clean bill of health, and Army and Navy spokes-

men indicated no interest in regulation. The compact commission, represented by J. C. Hunter, reported that progress is being made in bringing producing states into line behind the conservation program.

During its final hearing, there were no witnesses testifying in favor of federal regulation, and members of the subcommittee evidenced no desire to revive the subject.

Railroad officials, supported by representatives of railway labor, told the subcommittee there is no economic necessity for the pipe lines, and both groups were agreed that the lines were projected as business propositions before the defense emergency which, according to letters of President Roosevelt and the Secretaries of War, Navy and Interior, makes their construction essential.

Members of the subcommittee indicated willingness to enact legislation, as suggested by the President, but appeared doubtful of the way in which the problem should be approached, suggesting that if pipe line companies were given the authority to acquire rights of way by condemnation the construction of such lines should be subject to certificates of convenience and necessity issued by the Interstate Commerce Commission. Otherwise, it was intimated, a carte blanche authority to condemn might result in the construction of a number of pipe lines, further cutting into the business of the railroads which are attempting to halt the building of the two southeastern facilities.

Explaining the situation of the Plantation Pipe Line Company, organized by Standard Oil Company of New Jersey, Standard Oil Company of Kentucky and Shell Oil Company, R. T. Haslam, vice president of the New Jersey company, told the subcommittee April 1 that the pipe line company has applied to 24 railroad companies for a total of 81 crossing permits, which, with one exception, were denied. With the exception of Georgia and South Carolina, all of the states to be traversed by the line permit the exercise of the right of eminent domain to procure the crossing of railways and roads.

A proposed 1261-mile pipe line from Baton Rouge, Louisiana, to Greensboro, North Carolina, he said, is to be built "in order to assure a dependable source of petroleum products to the southeastern area in the event there should develop an interruption of ocean tanker movement to Atlantic seaboard ports by reason of any national emergency."

Southeastern Project Aired

Completely built except for 23 railway and 100 public road crossings, operation of the Southeastern Pipe Line Company, formed by Pure Oil Company and Gulf Oil Corporation, has been prevented by collapse of Georgia's 1937 law giving pipe lines condemnation rights, the subcommittee was told by A. Steve Clay, counsel for the company.

The pipe line was planned under the advantages of that law, which, however, was held invalid by the state courts. Efforts to secure new legislation during the recently ended session of the state assembly failed, despite pressure brought to bear by President Roosevelt and the administration, and the next regular session will not be held until 1943, he explained.

The company plans a line from Port St. Joe, Florida, to Chattanooga, Tennessee, and has in operation the first 100 miles, to Bainbridge, Georgia. Like the Plantation line, it would serve a number of military points in the area but, Clay admitted, was originally planned before the present emergency and was not designed primarily for defense purposes, although those will enter into the picture.

To clean up the record of a situation discussed last year by the subcommittee, Frank Buttram, president of the Independent Petroleum Association of America, at the request of Committee Chairman William P. Cole, Jr., filed a report showing that on February 1, practically all purchasing companies in Oklahoma and Kansas abandoned their former method of purchasing crude on the basis of 97 percent tank tables, with three percent deducted for volume change due to temperature and basic sediment and water.

Railroads Challenge Congress

Laying their side of the controversy before the subcommittee April 2, railroad executives challenged the right of the Congress to invade the province of the states by enacting legislation granting pipe line companies the power to exercise eminent domain.

Despite references by Cole to expressions by the President and heads of the military departments that the pipe lines were desirable from the standpoint of public defense, they refused to admit that there was any justification for their construction from that angle, with H. H. Simms, traffic manager for the Atlanta & St. Andrews Railway, declaring bluntly that the President must have been "misinformed."

The major statement for the railroads was made by W. L. Stanley, vice president of the Seaboard Air Line Railway, who asserted that both of the pipe line projects "were originally considered wholly as commercial ventures without any suggestion as to their relationship to the national defense, which was not even mentioned until it developed that petroleum pipe lines did not possess the right of eminent domain in Georgia."

Stanley declared that if the oil companies are permitted to construct the lines it would be a "direct repudiation" of the recommendation of President Roosevelt in 1933 for divorce of pipe lines. Under sharp questioning by Cole on this point, he explained that in his letter urging action on the southeastern lines the President had referred to their construction by "private capital" but had not said or inferred that the capital was to be furnished by oil companies.

Stanley denied flatly that the public would get lower gasoline prices, as had been promised by Haslam, supporting his assertion by quotations from the testimony of A. M. Stephens, general traffic manager of Standard Oil Company of Kentucky, before the Interstate Commerce Commission, in which it was admitted that when using water transportation, "where we save any money, we put it into our pockets; we do not pass it on to the consumer."

Cites Railroad Taxes

Construction of the pipe lines, he told the subcommittee, would deprive the railroads of the southeast of 6.6 percent of their freight traffic and necessitate a corresponding reduction in employment, throwing more than 11,000 men out of work and reducing the wage income of the area by $20,500,000 a year. In addition, it would seriously curtail the taxes collected by the southeastern states from the railroads, amounting to $39,883,000 in 1939, of which $10,571,000 was for school purposes.

Stanley's main argument was that the pipe lines had not been shown to be necessary for the national defense. Both of them traverse territory long distances from the Atlantic seaboard, and he introduced letters from Army and Navy officials denying that the lines would be valuable from a military standpoint.

Says Tankers Not Needed

As of September 1, last, he said, the Association of American Railroads found 19,554 tank cars in good service lying idle on the rails of the carriers or on the tracks of their owners. Half of that number, making allowance of generous time for loading and unloading and for movement at the average of freight speed, would have been sufficient to handle by rail all of the petroleum products shipped into the Atlantic ports from Norfolk south last year by tanker, with plenty left over to handle the additional traffic represented by defense needs, he figured.

On the other hand, he said, the pipe line companies' claim that their projects would release tankers needed for other services, is not borne out by statements of defense officials as to the need for tanker tonnage.

Questioned by Lea as to the effect of the demand for pipe on the iron and steel industry, already engaged in heavy defense production, Stanley said he was without information as to whether its manufacture would interfere with defense work but that the proposed lines would require "enough steel to build a battleship."

A. B. Conger, attorney for Seaboard Airline Railway, warned the subcommittee that before it acts in the controversy it must decide whether Congress has the power to grant a private corporation the right of eminent domain as well as whether Congress should invade the "right and province of the state."

He told the subcommittee that the railroads seriously question whether Congress has the authority to act but that, in any event, it should not interfere in what has been shown to be a purely business controversy.

Georgia, he said, has gone on record as opposed to the pipe lines, the last legislative election having been fought on that issue, and if the construction of the lines cannot be demonstrated to be vital to the national defense the federal government should not intervene.

TNEC Makes No Mention of Oil in Report to Congress

Efforts to impose federal regulation on the oil industry received a severe setback last week when the Temporary National Economic Committee, submitting its final report to Congress, made no recommendations for oil legislation and no reference to the industry, which it had spent weeks in investigating.

The omission of oil from the report was seen as significant in view of the fact that lengthy hearings had been held on the industry, and the further fact that

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Branch Stores at All Important Places in the Oil Country

during the period of drafting the document the federal control issue again was in the limelight.

The committee's failure to consider the subject, however, was seen due to the belief of Assistant Attorney General Thuman Arnold, department of justice member of the group, that the ills of the industry will be remedied by a suit now pending in the District of Columbia federal court, which it is believed may be settled by a consent decree before it reaches trial.

There were a number of recommendations for legislation in the report which would apply to petroleum as well as all other industries, such as the suggestion that laws be enacted prohibiting interlocking directorships and making corporation officers and directors personally liable for violations of the anti-trust laws by their companies; compulsory licensing of patents; prohibition against mergers felt by the Federal Trade Commission not to be in the public interest, and strict enforcement of the anti-trust statutes by the Department of Justice and the Federal Trade Commission.

The committee's report was not unanimous, four of the 12 members dissenting. In a separate statement, Isador Lubin, commissioner of labor statistics, and Leon Henderson, member of the Securities and Exchange Commission, declared that the program which the report presents will not be adequate to meet the problems which the committee studied.

Submission of the report marks the final act of the TNEC, set up nearly three years ago to investigate monopoly in industry and trade, in the course of which intensive investigations were made of competitive conditions in a number of selected major industries.

The testimony taken by the commission during its more than two years of hearings is expected to fill some 40 volumes, in addition to which more than 40 monographs, both on investigated industries and on businesses which the committee did not study personally, are being issued by the TNEC staff.

Oil Buyers Oligopsonists, Monopsonists, TNEC Told

Major oil companies buying crude from independent producers are "oligopsonists" and "monopsonists," it was charged by Clair Wilcox, professor of economics at Swarthmore College, in a monograph on "Competition and Monopoly in American Industry," issued last week by the Temporary National Economic Committee.

"Oligopsony," the monograph explained, is a form of imperfect competition which prevails when buyers are few in number and any one of them is of such size that an increase or decrease in his purchases will appreciably affect the market price. "Monopsony," was described as a monopoly-like situation which exists on the buyers' side of the market when a single buyer, or a number of buyers acting in unison, control the entire demand for a commodity, or enough of it to enable them to augment their profits by restricting the amount that they will purchase or by reducing the price that they will pay.

Applying the terms to conditions in the petroleum producing industry, Wilcox declared the major companies dominate the market in which the independent sells his crude, and that testimony before the TNEC showed that in 1937, 20 majors, producing 52.5 percent of the crude, had 83 or 84 percent of the runs to stills and 96.5 percent of the stocks above ground.

"In the market as a whole and in many producing fields," he said, "the position occupied by these buyers is that of oligopsony. One of the majors may take the lead in setting a price which the others will follow or several of them may agree upon a price that will be paid. In some fields, moreover, a single company in control of pipe line transportation stands as a monopsonist. But the situation in which the independent producer finds himself is a competitive one," he pointed out. "He does not control the price at which he sells."

The monograph, in which situations in the gasoline, pipe line and Ethyl gasoline branches of the industry were reviewed briefly on the basis of the testimony taken by the committee during its hearings on oil, has as its purpose the outlining of certain areas of American industry which have been characterized by competitive or by monopolistic conditions are some time during the period since the end of the World War I.

Ickes Letter Seen as Threat To California Program

A thinly-veiled threat that the voluntary oil conservation program in operation in California may soon be subject to federal court action, and a reiteration of his belief that federal oil control is necessary, are contained in a letter from Secretary of the Interior Harold L. Ickes to the Oil Producers Agency.

Ickes' letter was a reply to a letter signed by Rush M. Blodget, executive vice president of the agency, which asked the secretary to explain a recent statement that the California oil industry "is still running hog-wild." Ickes said in part:

"It is not inconceivable that should voluntary proration be found by the courts to be in violation of federal laws, that the oil industry of California might be faced with conditions in which there would be a tremendous increase in the waste of petroleum."

As to federal control, Ickes stated, "I continue to favor an oil and gas conservation law whereby the efforts of the federal government, the oil producing states, and the oil industry can be coordinated for the prevention of avoidable waste in the production and utilization of an exhaustible natural resource."

The secretary also said that because California had not "enacted comprehensive oil and gas conservation laws" he stood on his position "that California is not protecting adequately its oil and gas reserves."

United States Chamber to Protest Federal Control

The United States Chamber of Commerce will take a strong stand against federal control of the natural resources industries at its annual meeting April 29 to May 1.

The question has been advanced for consideration by the natural resources department committee, which proposes a declaration that the gradual extension of federal authority into the states for control of natural resources should stop, with opposition to proposals for federal control over all streams, over the production of petroleum from the ground, over cutting of trees on privately-owned lands, etc.

Texas Sends Strike Measure to Governor

Both houses of the Texas legislature passed and sent to the governor a bill to outlaw violence in Texas strikes. The governor was expected to sign the bill immediately. A companion bill, passed by the House and sent to the Senate, would create an arbitration board to settle labor disputes. A five-man board representating labor, management and one disinterested party would make findings. No strike could be called until these findings are determined to be unsatisfactory to labor.

Pipe Lines

Socony-Vacuum to Build 250-Mile Gasoline Line

Socony-Vacuum Oil Company has awarded contracts for construction of a gasoline and refined products line from Topeka, Kansas, to Sioux City, Iowa, to connect with the firm's gasoline trunk line from its refinery at Augusta to Kansas City.

The line will consist of approximately 250 miles of 6-inch pipe. Contract for a 58-mile section extending northeast from Topeka has been awarded to Midwestern Engineering and Construction Company, Tulsa, for a center 91-mile section to Oklahoma Construction Company, Oklahoma City, and for a 90-mile section terminating at Sioux City, Iowa, to Jones & Brooks, Inc., Dallas.

Construction will start May 15, with completion scheduled within 60 days.

Build 15-Mile Line to Serve Michigan Field

Bay Pipe Line Company has started construction of 15 miles of 6-inch welded line from the Adams field, Arenac County, south to a junction on its 6-inch main line between the Buckeye field and its Bay City terminal. It will give the field its first direct pipe-line outlet. At the present time, about 3700 barrels of oil a day is moved by a short line from the field to a railroad loading rack at Sterling.

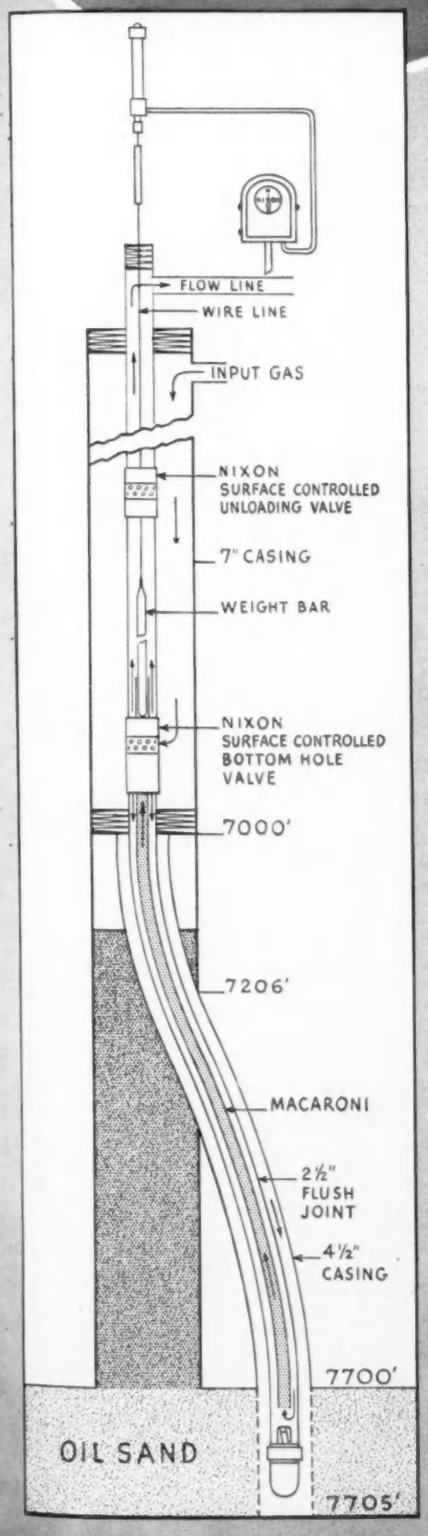
Bay Pipe Line Company will not enter the field as a gathering company. Present buyers are McClanahan Pipe Line Company and The Pure Transportation Company. The McClanahan Pipe Line Company is associated with Bay Pipe Line Company in construction of the new line.

Build Gas Line to Army Camp in Louisiana

United Gas Pipe Line Company last week announced plans for a 50-mile gas line from DeQuincy, Louisiana, to Camp Polk, Louisiana, near Leesville. The line will serve this new army camp with gas from the Jennings, Roanoke and Iowa fields, Louisiana.

Part of the line will follow the right-of-way of the company's present 3-inch line from DeQuincy to DeRidder. The new line will consist of 21 miles of 10-inch, 22 miles of 8-inch, and 7 miles of 4-inch.

GAS PUMPING WITHOUT MOVING PARTS IN CROOKED HOLE



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Oil Shortage Fears Unfounded; A.A.P.G. Meeting Told

FEARS of a shortage of petroleum supplies is unwarranted. The United States oil industry is not only prepared to meet all current demands for its products, including increases due to enlarged military activities and the nation's defense program, but also can be expected to fulfill all future requirements for a considerable period of time in view of the vast unexplored territories considered favorable for petroleum accumulations.

These are conclusions to be drawn from information disclosed by speakers at the twenty-sixth annual meeting of the American Association of Petroleum Geologists in Houston last week. Meeting concurrently with the geologists were the Society of Exploration Geophysicists, and the Society of Economic Paleontologists and Mineralogists. Registration for the three meetings exceeded 2800, nearly 1000 more than the previous record attendance.

ED W. OWEN, geologist for Lew Wentz at San Antonio and who has serviced the American Association of Petroleum Geologists for the past two years as secretary-treasurer, was named to head the organization. Fritz L. Aurin, president of Southland Royalty Company, Fort Worth, was the other candidate for this position. Owen succeeds Dr. L. C. Snider, University of Texas.

Earl Noble, chief geologist for Union Oil Company of California, Los Angeles, was elected vice president; E. O. Markham, The Carter Oil Company, Tulsa, was chosen secretary-treasurer, and Walter A. Ver Wiebe, University of Wichita, Wichita, was re-elected publication editor,, a position he has held for a number of years.

The ability of the industry to meet all defense requirements, without disturbing civilian consumption, in the United States was described forcefully by Dr. R. E. Wilson, who heads the Petroleum Section of the Advisory Commission to the Council of National Defense, and by J. Edgar Pew, vice president of Sun Oil Company.

After describing the United States' program of military mechanization, Wilson pointed out that while this constituted a large program, when measured against the size of the petroleum industry it became relatively small. To date, the pure military demand has not offset the loss of exports due to the war. "We estimate," he continued, "that in the absence of war the 1941 domestic demand for petroleum will be 8 or 9 percent in excess of the 1940 demand, and that in the event of war toward the end of the year, the demand for the major products will be increased about another 5 percent."

The industry can meet these increases without putting an extra load on the overburdened steel industry or the labor market to drill thousands of new wells, because a tremendous underground reserve has been created—available at a moment's notice for practically any emergency.

United States gasoline production has increased about 12-fold since 1916, and the unused refinery capacity of around 1,000,000 barrels daily is greater and more efficient than was the nation's entire capacity in 1918, he said.

While admitting oil is playing a most important role in modern warfare, Wilson called attention to the fact that Germany and Italy are conducting a war on petroleum supplies that is equal to only about 5 percent of the domestic production or consumption of the United States, and stated that the importance of petroleum in modern mechanized war should not be stressed without emphasizing the industry's ability to meet all this country's needs.

However, he listed several items he considered essential for further improving the industry's national defense position as being: Building up of aviation gasoline stocks; substantial additions to heavy fuel oil stocks on the Eastern Seaboard and at new proposed bases; adequate facilities for moving crude production from points south of the Red River to spare refining capacity in widely scattered sections of the country, with the most serious bottleneck being in tanker transportation facilities to East Texas.

He characterized tanker facilities, despite being 20 times that of the last war, as being inadequate to take care of any sharp increase in demand except by curtailment of civilian supplies. Moreover, he added, there is the possibility that tanker transportation on the East Coast might be interfered with during war times.

In other words, the greatest problem of the industry in meeting military demands was seen as being one of having the proper kind of supplies at the right place at the moment they are needed. Wilson gave no indication that there were any fears whatsoever as to the ability of the industry to fulfill requirements, if necessary transportation were available, and he certainly did not classify the latter problem as one of serious proportions.

A.A.P.G. President

Ed W. Owen

Pew Describes Past and Present

J. Edgar Pew also presented factual data supporting the industry's ability to fulfill all requirements of both national defense and civilian consumption. Today, production is four times greater than the 900,000 barrels the country was producing in 1917, and, he continued, at that time we were "using it as fast as we could get it out of the ground; today we have a constant struggle to keep production from outrunning demand. By the mere opening of valves, we could, overnight, add 30 percent to present production. I am advised that this would take care of any extraordinary requirements due to war conditions, in addition to providing for probable ordinary public needs, for a period of two years . . . "

"In 1917, reserves in the ground were estimated at four to five billion barrels. Today, known reserves, largely developed by the drill, are about 20 billion barrels. . . . A thousand, yes, 5000 wells could be destroyed, if that were possible, without affecting a single barrel of our reserves, and without materially affecting available supplies or our ability to meet all requirements."

The industry's own complete and unique transportation system, was described by Pew as being the cheapest transportation devised. If petroleum products had to be moved to market by conventional methods "the cost would be so great that a major share of the forld's oil fields would never have been developed. Even as it is, something like 40 percent of the cost of the gasoline you put into car at the filling station represents transportation. Without

the pipe line, the tankship, tank car and tank truck transportation system that the industry has built up, the additional cost would have been multiplied several times, to a point where the price when it reaches the consumer would be so great that few could afford to buy it." That would mean, Pew pointed out, that we would have thousands of motor cars where we now have millions, and that there would be hundreds of miles of modern highways, where we now have thousands of miles.

"If left unhampered by governmental interference, the oil industry can give full assurance," the speaker continued, "that it will meet every requirement. It needs no regulation. Rather, I firmly believe that government regulation of any industry of this kind, and most industries, can only produce inefficiency. That was the experience in the last war. In one industry with which I have some familiarity the government's attempt to control labor and operating conditions caused a loss of 30 percent in efficiency. Any attempt to centralize control of the oil industry, or of industry in general, more than is absolutely necessary, is just creating new bottlenecks; and bottlenecks which retard production are already too much in evidence . . . The only bottlenecks that need be feared would be such as would result from the sort of interferences I have suggested—well meant, but impracticable; interferences that would prevent the industry from quickly and effectively responding to demands. Competition in the industry is the most vigorous in its history; prices are low; profits are low; profiteering cannot honestly be charged, because it does not exist. The industry has done an efficient job, why mess it up?"

Roundtable on Future Oil Areas

Study of the ability to meet consumption requirements in the future came at a round-table discussion on the possibility of finding additional oil provinces in the United States and Canada, led by A. I. Levorsen, chairman of the organization's research committee. While admitting that present producing areas have enormous undiscovered reserves of oil, studies were confined entirely to those outlying areas which as yet have been but slightly explored and in which no discoveries of any consequence have been made to date. The various reports showed that the United States and Canada have hundreds of thousands of acres of unexplored territory with the necessary sediments, evidences of oil and gas, unconformities and wedge belts of porosity to be oil bearing. Based on these data, it was generally concluded that there was little likelihood that additional crude supplies would not be found in the future to supplement present producing provinces.

Unexplored areas and deeper possibilities in present oil provinces were omitted from the discussion. Thus, all Illinois, Louisiana, present producing portions of Indiana, Kentucky, Oklahoma, Kansas, Arkansas, Texas, Wyoming, Montana, New Mexico and California were not considered, although they no doubt will yield much additional oil. The group, however, was interested only with absolutely new provinces.

The type of geology in these unexplored areas was the subject of the evening. Regions pointed out as having areas with favorable conditions for oil accumulations were said to lie in Alaska, Western Canada, Eastern Canada, and the following parts of the United States: Rocky Mountain states, Pacific Coast states, West Central states, West Texas, Appalachian states and Southeastern states. Collectively, these represented hundreds of thousands of surface acres, many of which have very thick sedimentary beds. Because of the generally favorable petroleum geology in the region, geologists believed that sooner or later, by some means or another, they would become oil producing territory. Thus, it appears that there is little likelihood that additional crude supplies will be found in the future in the United States and Canada.

Opinions expressed did not represent the thoughts of any individual geologist; instead, geological organizations in the respective territories cooperated through committee studies to make the surveys. Some of the committees had as many as seven members. There were nine such groups. Thus, the reports represented the consensus of opinion of numerous geologists.

Moreover, studies were confined only to the more favorable regions. For instance, only areas with sedimentary sections of more than 1000 feet were considered, and nothing below the present drilling limits of 15,000 feet was given consideration.

Development of the various areas designated as favorable for oil and gas accumulations have been delayed in the past for one reason or another. In some instances it has been due to market conditions, while others have been shunned until shallow or more easily prospected sectors were fully exploited.

That the natural gas industry also is prepared to meet defense requirements was expressed by N. C. McGowen, president of United Gas Pipe Line Company and Union Producing Company. Present production of natural gas amounts to approximately 2½ trillion feet annually, or 3½ times more than in 1917. Moreover, the 180,000 miles of transmission system and 150,000 producing wells are much greater than 22 years ago. Meanwhile, reserves of natural gas in the United States have been increased to 66 trillion feet, and are being increased with additional discoveries at steady rates.

Present Exploration Trends Past Efficiency Peak, S.E.G. Told

PETROLEUM exploration trends were pictured as being in an era in which most present-day methods and techniques are passing beyond their peak in activity and finding ability, at the eleventh annual meeting of the Society of Exploration Geophysicists. On this basis, it was predicted that the prospecting branch of the oil industry would likely enter a period in which more effective applications of present methods or in which stratigraphic and direct exploration of oil would predominate.

S.E.G. President

H. B. Peacock

H. B. Peacock, Geophysical Service, Inc., Houston, was elected president of the society, succeeding W. T. Born, Geophysical Research Corporation, Tulsa. Frank Goldstone, Shell Oil Company, Houston, was elected vice president; W. M. Rust, Jr., Humble Oil & Refining Company, Houston, secretary-treasurer, while R. D. Wyckoff, Gulf Research & Development Company, Pittsburgh, was re-elected editor of the society's publication.

The industry can look forward to a difficult but orderly exploratory search for oil, said W. T. Born, retiring president. He anticipates no appreciable change in magnitude, whatever form it takes, until scarcity of fields becomes much more acute than at present. Techniques must continue to expand, and changes and improvements in applications must be made, he warned, in order to discover the necessary volume of oil in the future. Greatest advances probably will be in more effective applications of present methods, Born added. He predicted resurveying of old producing areas for minor structures and a search for deeper horizons, together with the use of seismic instruments for finding some types of stratigraphic traps. In view of the advanced interpretation of shot records that he predicted for the future, Born declared that an insignificant appearing prospect of today may become important tomorrow.

It was at technical sessions that other speakers pictured the petroleum exploration trends as being in an era in which such present day methods as geology, except coring and slim hole drilling, and magnetic and seismic and gravitational geophysical methods were passing beyond their peak in activity and effectiveness. This largely is due to the fact that many of the remaining structures apparently are of low relief. Deeper drilling trends and increased exploration costs, moreover, show that the

economic limit of structural exploration is being approached.

J. J. Jakosky, University of Kansas, asserted that the severe decline in number of large fields discovered during the past few years indicates need for concern about the supply of oil within the next five years unless future development of geophysical methods will allow location of stratigraphic traps. He predicted there would be only future minor improvements in present structural finding instruments, and that not in the too distant future the industry would witness another transient and enter a period in which stratigraphic and direct exploration of oil would predominate. He held that geochemical prospecting to date had proved the best direct method of finding oil.

E. E. Rosaire, Subterrex, asserted that the present structural finding methods were handicapped by interpretation ability, as it displays a more than appreciable finding effectiveness for anomalies which cannot be readily interpreted in terms of structure. He called attention to the possibility that the improved interpretation technique might increase its effectiveness, and thus lead to its renaissance.

Considerable attention was devoted to geochemical surface prospecting and well logging, radioactivity well logging, and electric well logging. Several papers were delivered on each of these subjects.

The technique for extracting and analyzing hydrocarbons present in soil samples was said to have been improved considerably. The significant patterns obtained, according to Leo Horvitz, Subterrex, are similar to those reported previously, but recent data are more outstanding in that much greater contrast is obtained between the zones of high concentrations and those of lower concentrations. A discussion of geochemical well logging indicated existence of a definite relationship between the constituents found in the sediments encountered in a bore-hole above a petroliferous deposit and the deposit itself. In this work, samples of formations penetrated by the bit are analyzed for hydrocarbon content, and there are examples of them indicating the approach of an oil-bearing zone.

Considerable progress has been made in the technique of producing radioactivity well logs, according to J. C. Barcklow, Lane-Wells Company. While much experimental work was done in the past on radioactivity, it was not until about June, 1940, that such logs were offered to the industry as a service. Many uses and applications have been suggested for them, and they no doubt will occupy a prominent place in the industry's future work.

The radioactivity well logging method was explained by Bruno Pontecorvo, Wells Surveys, Inc., as giving a curve of the total gamma radioactivity of the formation vs. depth. He described a method which permits predicting gamma ray-radioactivity logs by measuring in samples the amount of thorium in equilibrium with its products, of uranium in equilibrium with its products, and of potassium. The method consists of measuring the activity of a given sample in three different counters: beta, beta-gamma, and gamma. It has the advantage of not destroying the sample as happens in the "emanation" method. However, it requires considerably larger samples.

Associations

Hugh Johnson Sees No Demand for Federal Control

"There is no sentiment either in Congress or the country for taking over the oil industry and there will be none if this industry repeats its splendid performance of the first world war and the NIRA crisis," General Hugh S. Johnson declared before the annual dinner meeting of the California Oil & Gas Association at Los Angeles, March 3.

Johnson suggested to the more than 1000 oil men and their guests that this industry should be planning now some efficient organization for all-out cooperation by complete concert of action with whatever government group is finally put in responsible and authoritative charge of total American war production.

He advanced the suggestion that the oil industry should not wait to be drafted—that it should volunteer. "I would get ready to march today so that when the call comes you can report instantly, not only here in California, but throughout the whole national system," he declared.

Johnson suggested that the industry discipline itself by intelligent concert of action and not wait to have "Mr. Ickes do it by any Hitleresque goose-step. Under its present organization and management, the oil industry is the most efficient and economical system in the world. It would be folly to try to replace it with an experimental amateur organization." He pointed to the TNEC report and declared that such a substitution of bureaucratic control for the magnificent boldness of private adventure would halt development and discovery in its tracks and would be the quickest conceivable way to exhaust our reserves.

Drawing a comparison of suggested regulation of energy resources with current efforts at industrial mobilization, the speaker declared, "A monstrous duumvirate was set up to perpetuate rather than compose the bargaining battle between management and labor, and the whole country is becoming daily more resentful of the consequent harvest in the bottle-neck strikes."

Departing from his set speech, Johnson said the government would have to suspend the anti-trust laws insofar as they interfered with national defense production, to carry through its program. Continuing, he said labor strife over the country is not coming from the workers but is entirely a quarrel between the C.I.O. and A. F. of L. union leaders, both greedy for union dues.

He roundly criticized failure of the administration to take a firm stand on current labor disturbances and said that the government must get "tough" and put union leaders in their places.

R. E. Collom, president of the association, declared to the gathering that the petroleum industry is prepared to meet any national emergency. "We are ready to produce anything in our line that is needed, in any quantity and for any use. All we hope is that those who are talking most about the petroleum industry's relation to defense are really thinking about defense and that they let those who know how, and are trained for it, continue to run the oil business."

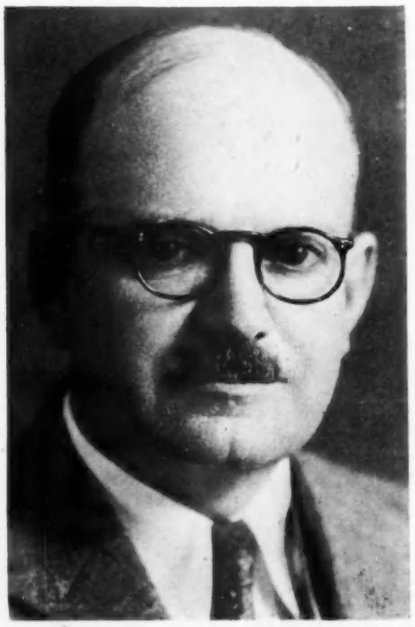
Henry V. Howe Heads Paleontology Society

Henry V. Howe, Louisiana State University, Baton Rouge, was elected president of the Society of Economic Paleontologists and Mineralogists at the organization's annual meeting, held in Houston last week. He succeeds Carey Croneis, University of Chicago.

Alice C. Ellis, Humble Oil & Refining Company, Houston, succeeded John R. Sandidge, San Antonio, as vice president.

H. B. Stenzel, University of Texas, was re-elected secretary-treasurer.

S.E.P.M. President



Henry V. Howe

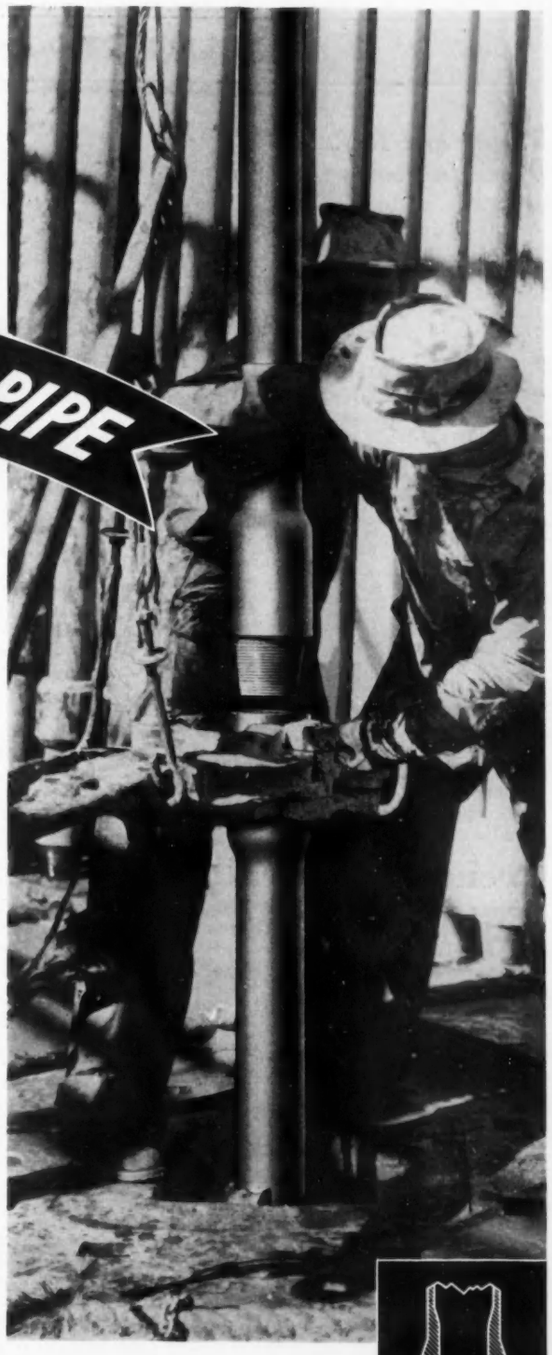
Rotary Drilling on Eastern District A.P.I. Program

Papers outlining progress made in rotary drilling in Eastern fields have been scheduled for the spring meeting of the Eastern District, American Petroleum Institute's Division of Production, to be held April 17-18 at Pittsburgh. The first half-day session will be devoted to drilling problems.

On the second day, a group of papers will be presented dealing with operating problems encountered in developing Illinois fields. Methods that have been worked out in coping with those difficulties have a wide application to similar problems in other oil- and gas-producing areas of Eastern states.

The annual banquet will be held on the night of April 17.

J&L
INTEGRAL-JOINT
BLUE RIBBON DRILL PIPE



"INTEGRAL-JOINT" because box and pin are neither screwed on nor welded on. They are integral with the drill stem.

No threaded connections between pipe and upset ends, as in the case of conventional joints, to encourage pipe failure from fatigue. Stress is evenly distributed.

No welded connections to impair the quality of the steel.

No assembling cost; the upset ends are made right on the pipe, from the same billet of steel.

Perfect alignment between pipe and upset ends.

A streamline interior impossible with pipe and conventional tool joints. This increases mud velocity without increasing pump pressure.

Plenty of stock in the upset ends to permit rethreading box and pin.

No heat treatment needed, which simplifies satisfactory shop service.

"BLUE RIBBON" because this J&L pipe is made only of Blue Ribbon steel, as hard and tough as the steel used in the best of conventional tool joints.

An alloy steel that is hard without being brittle, and tough without being soft, conveying to box and pin the quality to make up and break out like the finest tool joints.

J&L 100% inspection; inspection under J&L metallurgists to guarantee uniformly superior steel; inspection under engineers to guarantee mechanically perfect box and pin threads.

More hole for less money; hazards minimized; decreased drilling time—these are the dividends from using J&L Integral-Joint Blue Ribbon Seamless Drill Pipe.

J&L PIPE

FRICK-REID
Supply Corporation

TULSA, OKLAHOMA

Branches in Old and New Fields

Crude and Refined Oil Price Increases General

Almost the entire oil price structure of the country has been lifted in revisions of crude postings and product quotations of the past 10 days, prices having been advanced from well to retail outlet, and virtually all areas outside the Pacific Coast region having been affected.

The crude price advance was initiated March 29 when Humble Oil & Refining Company increased postings in Texas and New Mexico on an average of 6½ cents a barrel, and by April 1 similar increases had been generally adopted from the Gulf Coast to the Great Lakes and from the Rocky Mountains through the Middlewest.

Simultaneously, wholesale prices of practically all petroleum products moved moderately higher throughout the country east of the Pacific Coast territory. In the latter area, certain grades of crude had been increased in price earlier in the year, although other grades were reduced; and prices of products are generally firm and improving.

Gasoline was generally quoted ⅛- to ¼-cent a gallon higher at the middle of the past week by Mid-Continent and Middle Western refiners, and similar advances had been made along the Atlantic seaboard.

Natural gasoline also was up, to the extent of ⅛-cent a gallon, in the Mid-Continent.

Kerosene quotations were advanced generally ⅛-cent a gallon on all grades by refiners of the Southwest and Middlewest and by resellers, and a like increase occurred at Atlantic Coast points.

Light fuel oils were left unchanged by some Mid-Continent refiners, as seasonal decline of demand prevented full participation of that product in the upward movement. However, suppliers on the East Coast marked their prices up generally ⅛- to ¼-cent a gallon.

Diesel oil was advanced 10 cents a barrel on the Atlantic Coast. The new prevailing price in New York was $1.75 a barrel, on the average. On the Pacific Coast, too, diesel oil was higher, having been marked up 5 cents a barrel.

Heavy fuel oils, strong for several months, were lifted 5 cents a barrel at Mid-Continent and Middle Western refineries in the advance of the markets.

Lubricants, like gasoline, had been advancing in price independently of other products, and they easily moved farther upward in the recent general advance. Refiners in Western Pennsylvania increased their quotations on neutral oils 1-cent a gallon and on bright stocks ½-cent.

Both clean and dirty boats continued scarce, and chartering rates further advanced. Rates for clean boats, up 2 cents, were at 55 cents for gasoline, 58 cents for kerosene, and 62 cents for No. 2 fuel oil. Dirty boats were even more scarce than clean tankers, and after moving up 2 cents a barrel, were at 50 cents for 30-gravity or lighter crude and 57 cents for 10-20-gravity fuel oil.

New prices of crude oil, as announced within the past 10 days, are shown in an accompanying table. The postings in Texas are on an average of between six and seven cents a barrel higher than previous prices, crudes of virtually all gravity classifications having been increased. The schedules initiated by Humble Oil & Refining Company were generally adopted by other purchasers.

Increases in Texas included those of 5 cents a barrel in East and East Central Texas, North Texas and West Central Texas; 7 cents for the Refugio and Mirando districts, West Texas fields, Anahuac and similar Gulf Coast fields, and Talco; 10 cents for some Texas Gulf Coast fields, 6 to 11 cents for Panhandle fields; and 2 cents for Dickinson and similar fields of the Gulf Coast. New Mexico crude was marked up along with West Texas.

Oklahoma and Kansas postings were marked up generally 5 cents a barrel by virtually all purchasers.

Illinois basin crudes were advanced 5 cents a barrel by Sohio Corporation and some other buyers, including The Carter Oil Company and Gulf Oil Corporation, but The Texas Company posted a price of $1.22 a barrel, up 7 cents from the old price.

Advances in North Louisiana and Arkansas approximated 5 cents.

Some fields of the Rocky Mountain states were given crude price increases along with announcements of schedules in the Mid-Continent and Middle West, and others were expected to be affected.

A straight 5 cents per barrel advance for crude oil in most of the basin fields of Michigan was posted April 1 by leading buyers. Initiated by Leonard Pipe Line Company, the advance was quickly met by other purchasers. It was the first since January 2 in the basin, and pushed prices to a top of $1.27. The Michigan increase reflected not only the strengthening effect of diminishing production and advanced prices of competitive Illinois crude, but also the growing competition for the available Michigan supply, which now has declined to about 38,000 barrels daily, as compared with 65,000 barrels a year ago.

Trends of Operations and Changes in Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
1938:						
November 12	3,243,250	3,180,000	273,394,000	[6]67,551,000	34,175,000	120,491,000
December 10	3,245,100	3,150,000	[6]269,509,000	68,687,000	32,068,000	118,711,000
1939:						
April 22	3,526,700	3,280,000	277,156,000	[2]87,769,000	21,085,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	[7]25,844,000	[7]108,409,000
May 6	3,580,900	3,275,000	[2]278,607,000	86,216,000	26,167,000	108,597,000
July 29	3,539,100	3,460,000	268,513,000	77,887,000	34,900,000	114,053,000
August 5	[1]3,909,400	3,445,000	268,982,000	76,431,000	35,601,000	114,512,000
August 26	[8]1,690,800	3,475,000	246,982,000	73,475,000	37,722,000	116,237,000
September 30	3,658,200	3,560,000	233,023,000	71,168,000	38,081,000	115,466,000
October 7	3,435,850	3,505,000	231,564,000	[6]71,152,000	38,549,000	114,397,000
October 21	3,771,550	[2]3,650,000	[2]229,127,000	72,122,000	39,358,000	115,060,000
October 28	3,498,500	3,520,000	230,453,000	72,660,000	39,562,000	114,786,000
November 25	3,818,100	3,510,000	231,811,000	75,595,000	38,527,000	112,106,000
December 30	3,545,000	3,445,000	237,742,000	80,985,000	34,184,000	106,680,000
1940:						
January 27	3,611,600	3,470,000	237,339,000	87,914,000	27,407,000	103,015,000
February 24	3,732,100	3,490,000	240,836,000	96,719,000	25,390,000	103,419,000
March 30	3,841,250	3,585,000	250,561,000	101,370,000	23,778,000	105,081,000
April 20	3,858,550	3,535,000	254,881,000	[1]102,817,000	24,779,000	103,323,000
April 27	3,845,250	3,555,000	256,670,000	102,452,000	24,997,000	102,552,000
May 25	3,835,650	3,580,000	259,330,000	100,297,000	28,356,000	104,015,000
June 22	3,846,450	[1]3,690,000	260,891,000	97,276,000	32,751,000	104,683,000
June 29	3,639,550	3,625,000	262,059,000	95,142,000	33,590,000	104,486,000
July 27	3,690,400	3,555,000	262,579,000	90,173,000	38,981,000	105,924,000
August 31	3,501,350	3,575,000	265,865,000	85,393,000	44,766,000	108,774,000
September 28	3,799,950	3,600,000	263,609,000	82,273,000	47,986,000	108,450,000
October 26	3,640,300	3,565,000	262,746,000	80,891,000	[1]48,893,000	108,475,000
November 9	3,584,200	3,510,000	261,631,000	[6]79,847,000	48,408,000	107,687,000
November 30	3,335,050	3,510,000	262,679,000	80,284,000	46,212,000	106,618,000
December 28	3,385,500	3,585,000	261,552,000	83,274,000	42,266,000	102,620,000
1941:						
January 25	3,599,100	3,625,000	260,093,000	88,762,000	39,039,000	100,297,000
February 22	3,629,650	3,590,000	261,783,000	95,812,000	34,381,000	98,631,000
March 1	3,632,250	3,585,000	263,176,000	96,917,000	33,725,000	97,510,000
March 8	3,633,450	3,505,000	264,001,000	97,178,000	32,429,000	97,372,000
March 15	3,662,450	3,550,000	264,304,000	98,979,000	31,643,000	96,661,000
March 22	3,681,050	3,655,000	263,857,000	99,541,000	30,595,000	95,589,000
March 29, 1941	3,746,550	3,625,000	.....	99,727,000	29,949,000	96,152,000
March 29, 1940	3,841,250	[8]3,551,000	[4]247,401,000	103,283,000	23,236,000	102,870,000
Change in past year	—2.5%	+2.1%	+6.7%	—3.4%	+28.9%	—6.5%

[1] All time peak. [2] Peak for year. [3] Lowest since April, 1922. [4] Stocks, March 23, 1940.
[6] Lowest since October, 1922, due to shut down of six mid-continent states. [7] Lowest for year.
[7] Prior to April 29, 1939, data did not include stocks at terminals, in transit, etc., except in California.
[8] March, 1940, daily average.

Gasoline Accumulation Small; Heavy Fuel Added to Storage

Favorable conditions continued in evidence in the latest statistics of the industry, covering the week ended March 29. Refinery runs were cut back and yields were so regulated as to hold down additions to gasoline stocks and to add a substantial amount of needed heavy fuel oil to storage. Light fuel oils continue to come out of storage.

In the face of a 65,500-barrel increase of crude oil production, from 3,681,050

to 3,746,550 barrels daily, refinery runs were lowered from 3,655,000 to 3,625,000 barrels a day, according to the American Petroleum Institute, and the latter figure was only 2.1 percent above runs of March last year.

Production of gasoline dropped to 12,060,000 barrels for the new week, from 12,094,000 barrels the previous week.

Stocks of gasoline continued their seasonal increase, although at slower rate. The increment for the week was only 186,000 barrels, the total on hand having increased from 99,541,000 to 99,727,000 barrels. The new total was 3,556,000 barrels, or 3.4 percent smaller than the 103,283,000 barrels in storage at the end of March last year.

Stocks of ordinary gasoline were 5,448,000 barrels, or 5.5 percent, smaller than a year previously, the indicated total as of March 29, 1941, being 93,265,000 barrels, as compared with 98,713,000 barrels at the end of March last year.

Aviation-grade gasoline stocks are materially larger than a year ago, as desired for defense purposes. The inventory on March 29, 1941, was 6,462,000 barrels, compared with 4,570,000 barrels a year previously.

Stocks of heavy fuel oil are small, in view of current large consumption by industry. But storage was increased 563,000 barrels in the week ended March 29, from 95,589,000 to 96,152,000 barrels. The latter quantity was 6,718,000 barrels (6.5 percent) smaller than the 102,870,000 barrels on hand at the close of March last year.

Wholesale Prices of Refined Products in Principal Markets

	Range Last week (Cents a gal.)		Changes from week Before	
REFINED GASOLINE				
Oklahoma Refineries:				
60 Octane and under	3¾	4⅜	...	+⅛
63-66 Octane	4¼	4¾	+⅛	+¼
72-74 Octane	4⅝	5⅛	+⅛	+⅛
Mid-Western Tank Car:				
60 Octane and under	3⅞	4⅜	+⅛	+¼
63-66 Octane	4⅜	4⅝	+⅜	+¼
72-74 Octane	4⅝	5⅛	...	+⅛
New York Harbor:				
68-70 Octane	6	6	+¼	+¼
72-74 Octane	6	6½	+¼	+½
Gulf Coast:				
60 Octane unleaded	4½	4¾	+⅛	+¼
65 Octane unleaded	4¾	5	...	+⅛
72-74 Octane leaded	5	5½	+¼	...
NATURAL GASOLINE				
Grade 26-70:				
F.O.B. Group 3	2⅞	2⅞	+⅛	+⅛
F.O.B. Breckenr'ge, Tex.	2½	2½	+⅛	+⅛
KEROSENE				
Oklahoma Refineries:				
41-43 water white	4⅛	4⅜	+⅛	+⅛
42-44 water white	4¼	4½	...	+⅛
Mid-Western Tank Car:				
41-43 water white	4⅛	4⅜	...	+⅛
42-44 water white	4¼	4½	...	+⅛
New York Harbor	4⅞	4⅞	+⅛	+⅛
RANGE OIL				
At Oklahoma Refineries	3⅞	4⅛	...	...
In Mid-Western Market, Group 3, basis	3⅞	3⅞	...	...
LIGHT FUEL OILS				
Oklahoma Refineries:				
No. 1 straw	3⅜	3⅜	...	...
No. 3	3¼	3⅜	...	...
Mid-Western Tank Car:				
No. 1 white	3¾	3⅞	...	—⅛
No. 3	3⅛	3⅜	...	...
New York Harbor:				
No. 1	4⅞	4⅞	+⅛	+⅛
No. 3	4¼	4¼	+¼	+¼

	Range Last week (Per Bbl.)		Changes from week Before	
HEAVY FUEL OILS				
Oklahoma Refineries:				
No. 6	$0.70	$0.70	+.05	+.05
Mid-Western Tank Car:				
No. 5	.75	.85	...	...
No. 6	.65	.70	...	+.05
New York Harbor:				
No. 5	1.55	1.55	...	...
No. 6	1.25	1.25	...	...
BUNKER C FUEL OIL				
(Per barrel, ships' bunkers)				
Gulf Coast	$ .80	$ .90	...	+.05
New York Harbor	1.25	1.25	...	...
DIESEL OIL				
(Per barrel, ships' bunkers)				
Gulf Coast	$1.35	$1.50	...	...
New York Harbor	1.75	1.75	+.10	+.10
Los Angeles Basin, 27 gravity	1.20	1.25	+.05	—.05
LUBRICATING OIL				
(Cents a gal.)				
Oklahoma Refineries:				
Bright Stock, 150 - 160 viscosity at 210°, 10-25 pour test	13	15½	...	...
Neutral oil, pale No. 3 color, 150 viscosity at 100°, 0-10 pour test	8	10¼	...	...
Western Pennsylvania:				
Bright Stock, 145-155 viscosity at 210°, 25 pour test	15	15½	...	+½
Neutral Oil No. 3 color, 150 viscosity at 70°, 25 pour test	21	22	+1	+1

Extra Texas Shutdown Sharply Lowers Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (April)	State Allowable (Barrels Daily in April)	BARRELS DAILY FOR WEEK ENDED Mar. 29	April 5
TEXAS—				
Texas Panhandle	.....	.....	76,700	71,200
North Texas	.....	.....	102,200	98,800
West Central Texas	.....	.....	30,500	30,300
West Texas	.....	.....	242,100	208,500
East Central Texas	.....	.....	78,300	297,400
East Texas Field	.....	.....	443,800	75,700
South Texas	.....	.....	209,600	190,300
Texas Gulf Coast	.....	.....	255,900	230,200
Total Texas	1,355,300	1,325,291*	1,439,100	1,202,400
CALIFORNIA—				
Long Beach	.....	.....	41,600	41,300
Midway-Sunset	.....	.....	40,900	48,000
Kettleman Hills	.....	.....	38,700	37,800
Wilmington	.....	.....	82,400	83,500
Others	.....	.....	403,300	396,700
Total California	596,300	571,500†	606,900	607,300
OKLAHOMA—				
Oklahoma City	.....	.....	90,700	102,350
Seminole Area	.....	.....	106,650	103,100
Others	.....	.....	211,900	207,425
Total Oklahoma	429,300	400,000	409,250	412,875
ILLINOIS—				
Salem	.....	.....	102,400	102,100
Louden	.....	.....	66,000	65,000
Centralia	.....	.....	12,900	11,600
Other New Pools	.....	.....	138,800	137,200
Old Pools	.....	.....	10,900	10,600
Total Illinois	336,000	.....	331,000	326,500

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (April)	State Allowable (Barrels Daily in April)	BARRELS DAILY FOR WEEK ENDED Mar. 29	April 5
LOUISIANA—				
North Louisiana	.....	.....	70,600	70,500
South Louisiana	.....	.....	234,800	235,500
Total Louisiana	299,700	300,893	305,400	306,000
KANSAS	200,700	210,700	211,650	209,850
NEW MEXICO	109,000	110,000	109,500	109,500
EASTERN STATES—				
Pennsylvania Grade	49,000	.....	68,800	72,500
Others, Eastern	51,700	.....	20,000	19,800
Total Eastern States	100,700	.....	88,800	92,300
MOUNTAIN STATES—				
Wyoming	88,700	.....	78,300	75,400
Montana	21,300	.....	18,500	18,300
Colorado	4,300	.....	3,700	3,800
Total Mountain States	114,300	.....	100,500	97,500
MICHIGAN	44,000	38,000‡	38,100	37,800
INDIANA	23,700	.....	21,500	19,900
ARKANSAS	75,700	72,024	71,400	72,800
MISSISSIPPI	20,300	.....	18,800	19,800
NEBRASKA	4,300	.....	4,300	4,350
§Total 8 Prorated States	3,110,000	3,028,408	3,191,300	2,958,525
Total United States	3,709,300	.....	3,756,200	3,518,875

† Recommendation of Conservation Committe of California Oil Producers.
‡ Estimate of actual production under prescribed regulations, which do not fix a definite state total allowable.
§ Texas, California, Oklahoma, Louisiana, Kansas, New Mexico, Arkansas, Michigan.
* Texas Railroad Commission's estimate of actual net daily production allowing for usual under-production of 3½ percent under net allowable, which at the beginning of April is calculated at 1,373,359 barrels daily. However, allowable normally increases as new wells are completed. Under April order, most Texas fields were ordered shut down April 5, 6, 9, 12, 13, 19, 20, 26, 27 and 30. Texas Panhandle was ordered shut down April 6, 13, 26, 30.

CRUDE OIL PRICE SCHEDULES*

Mid-Continent Gravity Scale Prices—Posted March 29, 1941 Except as Shown Under Headings

(Some fields of Mid-Continent have flat price postings, and are shown separately)

Gravity	[11] Okla.-Kans. 4-1-41	[7] Okla.-Kans. 4-1-41	[10] North La.-Ark. 4-1-41	[9] Atlanta, Ark. 4-1-41	North & W. Central Tex. 3-29-41	East Central Tex. 3-29-41		[1] Dickinson, Tex. Type 3-29-41	Panhandle, West Tex.-New Mex. 3-29-41	[2] Gulf Coast (Tex.-La.) 3-29-41	[3] Some La. Gulf Areas 4-1-41	Jennings, La. 4-1-41	[4] Anahuac, Tex. Type 3-29-41	[5] Refugio, Tex. Type 3-29-41	[6] Mirando, Tex. Type 3-29-41	[8] Salt Creek, Wyo. (except Tensleep)
19–19.9	.....	.....	.....	.....	.....	*$0.73	.....	*$0.83	*$0.60	*$0.96	.....	.....	*$0.88	*$0.98	*$0.93	.....
20–20.9	*$0.75	$0.65	.....	*$0.58	.....	.75	.....	.85	.62	.98	*$0.80	.....	.90	1.00	.95	$0.70
21–21.9	.77	.68	.....	.60	.....	.77	.....	.87	.64	1.00	.82	.....	.92	1.02	.97	.72
22–22.9	.79	.71	.....	.62	.....	.79	.....	.89	.66	1.02	.84	.....	.94	1.04	.99	.74
23–23.9	.81	.74	.....	.64	.....	.81	.....	.91	.68	1.04	.86	.....	.96	1.06	1.01	.76
24–24.9	.83	.77	*$0.78	.66	.....	.83	.....	.93	.70	1.06	.88	.....	.98	1.08	1.03	.78
25–25.9	.85	.80	.80	.68	*$0.78	.87	.....	.95	.72	1.08	.90	.....	1.00	1.10	1.05	.80
26–26.9	.87	.83	.82	.70	.80	.89	.....	.97	.74	1.10	.92	.....	1.02	1.12	1.07	.82
27–27.9	.89	.86	.84	.72	.82	.91	.....	.99	.76	1.12	.94	.....	1.04	1.14	1.09	.84
28–28.9	.91	.89	.86	.74	.84	.93	.....	1.01	.78	1.14	.96	.....	1.06	1.16	1.11	.86
29–29.9	.93	.92	.88	.76	.86	.95	.....	1.03	.80	1.16	.98	.....	1.08	1.18	1.13	.88
30–30.9	.95	.95	.90	.78	.88	.97	.....	1.05	.82	1.18	1.00	.....	1.10	1.20	1.15	.90
31–31.9	.97	.97	.92	.80	.90	.99	.....	1.07	.84	1.20	1.02	*$0.97	1.12	1.22	1.17	.92
32–32.9	.99	.99	.94	.82	.92	1.01	.....	1.09	.86	1.22	1.04	.99	1.14	1.24	1.19	.94
33–33.9	1.01	1.01	.96	.84	.94	1.03	.....	1.11	.88	1.24	1.06	1.01	1.16	1.26	1.21	.96
34–34.9	1.03	1.03	.98	.86	.96	1.05	.....	1.13	.90	1.26	1.08	1.03	1.18	1.28	1.23	.98
35–35.9	1.05	1.05	1.00	.88	.98	1.07	.....	1.15	.92	1.28	1.10	1.05	1.20	1.30	1.25	1.00
36–36.9	1.07	1.07	1.02	.90	1.00	1.09	.....	1.17	.94	1.30	1.12	1.07	1.22	1.32	1.27	1.02
37–37.9	1.09	1.09	1.04	.92	1.02	1.11	.....	1.19	.96	1.32	1.14	1.09	1.24	1.34	1.29	1.04
38–38.9	1.11	1.11	1.06	.94	1.04	1.13	.....	1.21	.98	1.34	1.16	1.11	1.26	1.36	1.31	1.06
39–39.9	1.13	1.13	1.08	.96	1.06	1.15	.....	1.23	1.00	1.36	1.18	1.13	1.28	1.38	1.33	1.08
40 & Up	1.15	1.15	1.10	.98	1.08	1.17†	.....	1.25	1.02	1.38	1.20	1.15	1.30	1.40	1.35	1.10

* Minimum price and applies also to purchases of lower gravity.

[1] Includes Dickinson, Gillock, Hardin, League City, and Rowan fields.

[2] In Texas: Amelia, Barbers Hill, Big Creek, Blue Ridge, Clear Lake, Cotton Lake, Esperson, Fannett, Goose Creek, Hankamer, Hastings, Lovells Lake, Lochridge, Magnet, Moore, Mykawa, Nome, Orange, Raccoon Bend, South Liberty, Spindle Top, Sugar Land, Thompsons, Webster, Hastings, S. Houston, W. Beaumont.... In La.: Edgerly, Starks, Vinton, E. Hackberry, Cameron Meadows, Leesville, Timballer Bay, Grand Bay, Quarantine Bay, West Bay.

[3] Includes Bayou Mallet, Choctaw, Darrow, Jeanerette, Lirette, North Crowley, South Crowley, Port Barre, Potash, Roanoke, and St. Martinville.

[4] Anahuac, Cedar Point, Fairbanks, Turtle Bay, Hull, Orange, Pierce Junction, Batson, Caplen, Humble, North Dayton, Saratoga, Sour Lake, South Esperson, Spindle Top, West Orange, Thompson (deep), and Raccoon Bend (shallow) fields.

[5] Includes Saxet, E. White Point, Greta, O'Connor, McFadden, Taft, Plymouth, Melon Creek, and Tom O'Connor fields.

[6] Includes crude purchased in Blanchard, Birdwell, Colorado Comitas, Eagle Hill, Escobas, Fitzsimmons, Glen, Government Wells (North and South), Heyser, Hoffman, Kelsey, Kohler, Loma Novia, Lundell, Manila, Mirando Valley, Placedo, Randado, Sarnosa, and Tesoro fields.

[7] Oklahoma Pipe Line and Magnolia schedules.

[8] Includes La Barge, Midway Dome, Dutton.

[9] Also Buckner, Magnolia, Schuler (Jones Sand), Village.

[10] Add 10 cents for Bunkie, Eola, Olla, and deduct 2 cents for Caddo, De Soto-Sabine, Fouke, Homer, Miller County, Sugar Creek.

[11] Stanolind, Gulf, Texas, Skelly, Barnsdall schedules.

Mid-Continent Flat Prices

	Flat Price	Date Posted
Arkansas:		
Big Creek, Dorcheat, McKamie	$1.05	4–1–41
Smackover, Heavy	.76	4–1–41
Louisiana:		
Cotton Valley Distillate	1.20	4–1–41
Cotton Valley (Holloway Sand)	1.15	4–1–41
Garden Island	....	.....
Gibson	....	.....
Lafitte	....	.....
Lake Arthur & Tepetate	1.08	4–1–41
Ville Platte	1.10	4–1–41
Texas:		
Alice, Benavides (N. Sweden) Ben Bolt, Clark-Muil, Sun and Tom Graham	1.25	4–1–41
Cayuga	.85	4–1–41
Clay Creek	.90	4–1–41
Cleveland	1.16	4–1–41
Clinton	1.38	4–1–41
Conroe	1.33	4–1–41
Darst Creek	1.04	4–1–41
East Texas, Flag Lake	1.15	4–1–41
Flour Bluff, East Flour Bluff, Jim Wells County	1.23	4–1–41
Hockley	1.25	4–1–41
Livingston, Cleveland	1.15	4–1–41
Long Lake	....	.....
Luling	.95	4–1–41
Lytton Springs	1.07	4–1–41
North Rincon	1.25	4–1–41
Pettus	....	.....
Salt Flat, North Salt Flat, Darst Creek, Hilbig, Carroll, Clark Zoboroski	1.04	4–1–41
Satsuma, Tomball	1.30	4–1–41
Seabreeze, Willow Slough, La Belle, Hardin, S. China	1.15	4–1–41
South Cotton Lake	1.23	4–1–41
Sun	1.25	4–1–41
Talco	.72	4–1–41
Van	.98	4–1–41
Yates (Deep)	.85	4–1–41
Yates (Shallow)	.72	3–29–41

Middle West Prices

Lima, Ohio	$1.05	4–1–41
Illinois, old fields	1.05	4–1–41
Illinois Basin (Texas Co.)	1.20	4–1–41
Illinois Basin (Sohio Corp.)	1.20	4–1–41
Lake Centralia-Salem, Illinois	1.20	4–1–41
Princeton, Indiana	1.05	4–1–41
Sw. Ind-Se. Ill.; N. Griffin, S. Griffin, Phillipstown, New Harmony, Storms, Iron	1.15	8–21–40
Western Kentucky	1.15	4–1–41
Birk City, Western Kentucky	1.05	8–21–40
Kentucky River, Eastern Ky.	1.20	8–21–40
Big Sandy River, Eastern Ky.	1.12	8–21–40

* California prices and tax schedule for all states on page 62.

Major Price Changes

	Penna. Grade	Mid-Cont. (36 Gr.)	Calif. (26 Gr.)
Sept. 6, 1933	Up 10	Up 10	Up 15
Sept. 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
Nov. 6, 1934	Cut 25	.....	.....
Dec. 6, 1934	Cut 25	.....	.....
Jan. 4, 1935	Up 15	.....	.....
Feb. 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
Aug. 29, 1935	.....	.....	Cut *1
Sept. 6, 1935	Up 5	.....	.....
Oct. 29, 1935	Up 15	.....	.....
Nov. 1, 1935	.....	.....	Up *28
Nov. 18, 1935	Up 15	.....	.....
Dec. 6, 1935	.....	.....	Up *9
Jan. 9, 1936	.....	Up 10	.....
Jan. 13, 1936	Up 15	.....	.....
Mar. 7, 1936	.....	.....	Up *18
Dec. 28, 1936	Up 12	.....	.....
Jan. 28, 1937	.....	Up 12	.....
Feb. 24, 1937	Up 10	.....	.....
June 7, 1937	Up 15	.....	.....
Sept. 1, 1937	Cut 22	.....	.....
Oct. 12, 1937	Cut 25	.....	.....
Dec. 1, 1937	Cut 15	.....	.....
Mar. 7, 1938	Cut 17	.....	.....
June 13, 1938	Cut 25	.....	.....
Sept. 1, 1938	Cut 12	.....	.....
Oct. 11, 1938	.....	Cut 20	.....
Jan. 21, 1939	Up 12	.....	.....
Feb. 2, 1939	Up 8	.....	.....
Mar. 6, 1939	Up 12	.....	.....
Oct. 6, 1939	Up 25	.....	.....
Nov. 1, 1939	Up 15	.....	.....
Dec. 1, 1939	Up 10	.....	.....
Jan. 1, 1940	Up 25	.....	.....
Feb. 1, 1940	.....	.....	Cut *7
May 22, 1940	Cut 25	.....	.....
June 18, 1940	Cut 25	.....	.....
July 12, 1940	Cut 25	.....	.....
Aug. 28, 1940	Cut 15	.....	.....
Nov. 12, 1940	Up 15	.....	.....
Dec. 17, 1940	Up 15	.....	.....
Jan. 27, 1941	Up 15	.....	.....
April 1, 1941	.....	Up 5	.....

* Signal Hill 26 gravity.

Michigan Prices

	Flat Price	Date Posted
Central (Basin):		
Porter, Greendale, Crystal, Wise, Midland, Vernon	$1.27	4–1–41
Buckeye, Edenville, Bentley Beaverton	1.25	4–1–41
Freeman, Sherman, Redding	1.22	4–1–41
Arenac, Ogemaw, W. Branch	1.07	4–1–41
Southwest (Shallow):		
Allegan, Kent, Van Buren	1.23	1–16–41
Monroe Co.: Trenton line	1.17	1–16–41
Adams-Arenac	1.10	4–1–41

Rocky Mountain States Prices

	Flat Price	Date Posted
Colorado:		
Canon City and Florence	$0.95	4–1–41
Isles, Light	.98	10–11–38
Isles, Heavy	.92	10–11–38
Montana:		
Cat Creek	1.15	4–1–41
Cut Bank	1.00	1–1–40
Sunburst	.80	1–1–40
New Mexico:		
Artesia	.77	10–11–38
Hogback	1.00	10–11–38
Wyoming:		
Big Muddy	1.03	4–1–41
Byron	.55	10–11–38
Dry Creek	.92	10–11–38
Elk Basin	.90	10–11–38
Frannie, Light	.55	10–11–38
Frannie, Heavy	.42	10–11–38
Garland	.50	10–11–38
Grass Creek, Light	.90	10–11–38
Grass Creek, Heavy	.40	10–11–38
Hamilton Dome	.35	10–11–38
Lance Creek	.82	4–1–41
Mill Creek	.72	10–11–38
Oregon Basin	.40	4–20–40
Osage	1.30	10–11–38
Poison Spider	.59	10–11–38
Rock River	1.05	4–1–41
Tensleep	.646	10–11–38

Eastern States Prices

	Flat Price	Date Posted
Bradford-Allegany	$2.30	1–27–41
Sw. Pa. Pipe Line	1.95	1–27–41
Eureka Pipe Line, W. Va.	1.89	1–27–41
Corning Grade, Ohio	1.17	4–1–41
Buckeye Crude, Ohio	1.55	7–12–40

ALLIS-CHALMERS ENGINES

Good oil is cheap engine insurance—the lubrication systems of Allis-Chalmers heavy duty pumping engines are designed to take full advantage of the high quality lubricating oils now available—You get your money's worth for every dollar's worth of oil you use.

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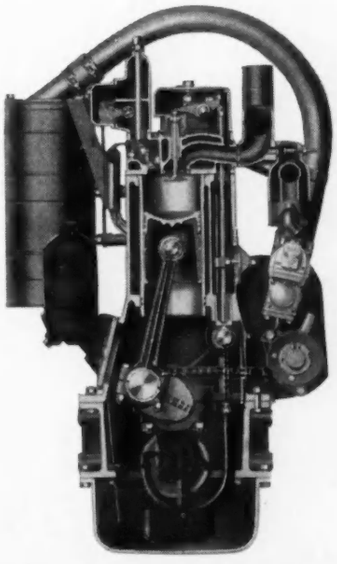
The engine is completely protected from dust and dirt; air for combustion is cleaned by an oil bath air cleaner. The entire contents of the crankcase are thoroughly cleaned about every seven minutes.

Oil system doesn't fail to maintain required pressure because the oil pump is driven by heavy duty gear from the cam shaft—the only sure method.



Positive force feed lubrication to all working parts is provided by large capacity high pressure oil pump.

Wrist pins are lubricated through rifle drilled connecting rods. Rocker arms are pressure lubricated by drilled passages through rocker arm shaft.

Lubrication systems in Allis-Chalmers engines will lengthen engine life, on the toughest kind of stationary installations.

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Increased Price Points Toward Stabilization

[*Continued from page 14*]

to the behavior of commodity prices in general. As shown on one of the charts presented herewith, the United States Department of Labor's price index of 813 commodities at wholesale, based on the average for 1926 as 100, rose from an average of 77.1 in 1939 to 78.6 in 1940 and in February, 1941, stood at 80.6, following steady gains in the latter part of 1940. But in the meantime, despite higher costs of the materials used in drilling wells and building refineries, and despite increasing taxes, prices of crude oil remained unchanged. They averaged approximately $1 a barrel (for the United States) in 1939, and again averaged virtually that same amount in 1940 and the first three months of 1941. It is doubtful if the raises of 5 or 6 percent involved in the revisions of March 29-April 1, 1941, will compensate producers for the increases in their operating costs and taxes.

Texas Hearings

The Texas Railroad Commission has scheduled the following hearings:

April 12, application of Sun Oil Company for revision of field rules for the Guerra field, Starr County;

April 12, application of Boone Brothers for a higher allowable in the Trinity field, Houston County;

April 18, application of Coast Petroleum Company for revision of field rules in the Dickinson and Gillock fields, Galveston County.

Oil Production Taxes

In all states other than Texas, levies are severance taxes, collected in lieu of all other taxes, with exception of small special assessments made in Louisiana and Oklahoma, as shown below.

In Texas, any political subdivision as well as the state has power to tax, and state itself levies special taxes in addition to gross production tax, as shown below.

Arkansas—2.6 percent of gross market value.

California—.66443 mills per barrel of oil produced and 17.39 cents an acre on proved lands.

Louisiana—From 4 to 11 cents a barrel, depending upon gravity, average being 7½ to 8 cents; in addition, special taxes may be levied on well equipment, bringing total tax to average around 8¾ cents a barrel.

Montana—Two percent of gross value at well and ⅜ of 1c per barrel.

New Mexico—Severance tax of 2 percent on oil and gas.

Oklahoma—Five percent of gross value less royalty interests; in addition, surplus warehouse stocks may be taxed by counties.

Texas—Gross production tax is 2¾ cents a barrel or 2¾ percent, whichever is higher, and averaged 2.94 cents in 1939. In that year, total tax on average barrel produced was, however 9.23 cents, having included following levies: gross receipts 0.14 cents, regulatory 0.19 cents, state ad valorem 0.98 cents, franchise 0.06 cents, other state taxes 0.62 cents, and local ad valorem 4.30 cents.

Wyoming—Production tax based upon state and county assessments.

Kansas Holds Special Hearing On Two-Zone Production

A special hearing was held last week by the Kansas Corporation Commission on dual potentials for wells producing through two pay formations.

R. S. Ritchie, McPherson Drilling Company, asked the commission to give consideration to the question, and in turn was asked to prepare a rule to govern such production. Engineers of other firms outlined specific questions and procedures that should be considered if dual potentials and dual allowables became a state-wide policy.

The question involves use of a packer to separate two producing horizons within a well so that each can be considered a single well. Each pay formation would be given individual allowables based upon separate potentials. Production from two zones could be obtained through raising or lowering perforated tubing, by adjusting packer, or through other mechanical means. Offset properties, protected by present rules, might have to be reconsidered if two-zone production is approved. Other questions that would come up would be depletion rates, minimum well allowables from one or both zones, interchange of reservoir energies and guarantee of legal, yet separate, withdrawals. Policing may be a major question.

Producing from two separated zones is not new in the industry, nor is it new to Kansas. In Campbell field, Rice County, and in north Chase field nearby, some wells are being produced in this manner from Kansas City-Lansing and Arbuckle formations with individual potentials allowed the two strata.

CALIFORNIA CRUDE OIL PRICES

Posted effective March 11, 1941. All gravities above those quoted take highest price offered in field.

Gravity	Wilmington	Signal Hill (Long Beach), El Segundo	Seal Beach	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea, Canon	Athens-Rosecrans	Elwood Terrace	Torrance	Richfield	Whittier, East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Newhall, McKittrick, Kern River, Round Mt., Kern Front	Greeley, Canal, Wasco	Coles Levee, Richfield Western	Mountain View	Elk Hills, Buena Vista Hills, Midway-Sunset, Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills
14-14.9	$0.60	$0.65	$0.64	$0.63	$0.64	$0.65	$0.61	....	....	$0.65	$0.61	$0.61	$0.62	$0.63	....	$0.65	....	....	....	$0.65	$0.65	$0.65	....	....
15-15.9	.60	.65	.64	.63	.64	.65	.61	....	....	.65	.61	.61	.62	.63	....	.65	....	....	....	.65	.65	.65	....	....
16-16.9	.60	.65	.64	.63	.64	.65	.61	....	....	.65	.61	.61	.62	.63	....	.65	....	....	....	.65	.65	.65	....	....
17-17.9	.62	.65	.64	.63	.68	.65	.61	....	....	.65	.61	.61	.62	.63	....	.65	....	....	....	.65	.65	.65	....	....
18-18.9	.64	.65	.64	.63	.71	.65	.65	....	....	.68	.61	.61	.62	.63	....	.65	....	....	....	.65	.65	.65	....	....
19-19.9	.69	.69	.64	.67	.75	.70	.69	....	....	.72	.61	.65	.62	.63	....	.65	....	....	$0.65	.65	.67	.65	$0.65	....
20-20.9	.73	.73	.64	.72	.79	.76	.74	....	....	.75	.65	.69	.62	.67	....	....	....	....	.65	.69	.70	.65	.65	....
21-21.9	.78	.78	.64	.76	.82	.81	.78	....	....	.79	.69	.73	.62	.72	$0.63	....	....	....	.65	.74	.74	.67	.65	....
22-22.9	.82	.82	.69	.81	.86	.86	.82	....	....	.82	.73	.77	.66	.76	.63	....	....	....	.68	.79	.78	.70	.65	....
23-23.9	.86	.86	.75	.85	.89	.92	.86	$0.71	....	.86	.78	.82	.71	.81	.67	....	....	....	.71	.84	.82	.74	.68	....
24-24.9	.90	.90	.80	.90	.93	.97	.90	.77	....	.89	.82	.86	.75	.85	.72	....	....	....	.75	.89	.86	.78	.71	....
25-25.9	.95	.95	.86	.94	.96	1.02	.95	.82	....	.93	.86	.90	.80	.89	.77	....	....	....	.79	.94	.90	.82	.75	....
26-26.9	.99	.99	.91	.99	1.00	1.08	.99	.88	....	.96	.90	.94	.84	.94	.82	....	....	....	.83	.99	.95	.85	....	....
27-27.9	1.03	1.03	.97	1.03	1.04	F.O.B.	1.03	.94	....	1.00	.94	.98	.89	.98	.87	....	$0.83	$0.92	.87	1.04	.99	.89	....	....
28-28.9	1.07	1.07	1.02	1.07	1.07	Pipe Line	1.07	.99	....	1.03	.98	....	.93	1.02	.91	....	.86	.95	.91	1.09	1.03	.92	....	....
29-29.9	1.10	1.10	1.07	1.11	1.10	....	1.10	1.04	....	1.06	1.02	....	.98	1.06	.96	....	.89	.97	.95	1.14	1.07	.94	....	....
30-30.9	1.14	1.14	1.12	1.15	1.14	....	1.14	1.09	F.O.B.	1.09	....	....	1.02	1.10	1.01	....	.92	.99	.99	1.19	1.11	.97	....	....
31-31.9	....	....	....	....	1.17	....	1.17	1.14	Ship	....	....	....	1.07	1.14	1.05	....	.95	1.02	1.02	....	....	.99	....	....
32-32.9	....	....	....	....	1.20	....	1.20	1.19	....	....	....	....	1.11	1.18	1.09	....	.98	1.04	1.06	....	....	1.02	....	....
33-33.9	....	....	....	....	....	....	....	1.24	$1.13	....	....	....	1.15	1.22	1.14	....	1.01	1.07	....	....	....	1.04	....	$1.04
34-34.9	....	....	....	....	....	....	....	1.29	1.16	....	....	....	1.20	1.26	1.19	....	1.04	1.09	....	....	....	1.07	....	1.08
35-35.9	....	....	....	....	....	....	....	1.34	1.19	....	....	....	1.24	....	1.23	....	1.07	1.12	....	....	....	....	....	1.12
36-36.9	....	....	....	....	....	....	....	1.39	....	....	....	....	1.28	....	1.27	....	1.10	1.14	....	....	....	....	....	1.15
37-37.9	....	....	....	....	....	....	....	1.44	....	....	....	....	1.33	....	1.31	....	1.13	1.16	....	....	....	....	....	1.19
38-38.9	....	....	....	....	....	....	....	1.49	....	....	....	....	1.37	....	1.36	....	1.16	1.19	....	....	....	....	....	....
39-39.9	....	....	....	....	....	....	....	1.54	....	....	....	....	1.42	....	....	....	1.19	....	....	....	....	....	....	....
40-40.9	....	....	....	....	....	....	....	1.59	....	....	....	....	1.46	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	....	....	....	....	....	....	....	....	....	1.50	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	....	....	....	....	....	....	....	....	....	1.54	....	....	....	....	....	....	....	....	....	....	....
43-43.9	....	....	....	....	....	....	....	....	....	....	....	....	1.59	....	....	....	....	....	....	....	....	....	....	....
44-44.9	....	....	....	....	....	....	....	....	....	....	....	....	1.63	....	....	....	....	....	....	....	....	....	....	....
45-45.9	....	....	....	....	....	....	....	....	....	....	....	....	1.67	....	....	....	....	....	....	....	....	....	....	....
46-46.9	....	....	....	....	....	....	....	....	....	....	....	....	1.71	....	....	....	....	....	....	....	....	....	....	....

WORLD-WIDE DEVELOPMENTS

Mexico

Mexican Oil Law Continues Anti-Foreign Policy

Prospect that foreign capital again might be permitted to participate in oil development in Mexico loomed briefly in recent draft of amendments to the Mexican petroleum law, submitted by President Manuel Avila Camacho to Congress, but later revision showed deletion of the provision that would have welcomed foreign capital again to the Mexican field.

As they now stand, the proposed amendments to the petroleum law, already approved by the Chamber of Deputies and now pending before the Senate, will make little material change in the law left by President Lazaro Cardenas to insure sweeping control by the government of all oil activities.

The provision in which for a brief while was seen the reopening of the door to foreign oil capital provided that contracts for oil exploitation might be made by the government with private Mexican citizens, companies exclusively formed by Mexican citizens and "mixed economy" companies in which the majority of capital stock would be held by the government.

It was further specified in the draft of amendments, submitted by President Camacho, that foreigners might participate in the "mixed economy" companies, although the government would retain stock control.

Before the draft of amendments came to a vote in the Lower House, it was withdrawn and the provision that foreigners might participate in "mixed economy" companies was stricken out. Minister of National Economy Francisco Javier Gaxiola, Jr., under whose secretariat the oil administration operates, offered the explanation that the deleted provision was an error in drawing up the amendments. The amendments, without the foreign participation provision, were then passed by the Chamber of Deputies and are now before the Senate.

It will be recalled that President Cardenas, following expropriation, submitted an amendment to Article 27 of the Constitution (vesting land, water and subsoil rights in the nation), prohibiting granting concessions for oil exploitation. Approved by the Federal Congress and a majority of the State Legislatures, this Constitutional amendment became effective with official publication November 9, 1940, only a short time before the end of the Cardenas administration. The new regulatory law for petroleum development was printed and became effective the same day.

Under the terms of this law promulgated by Cardenas, it was specified that the government could make contracts, as distinguished from granting of concessions, for oil exploitation with Mexicans or companies exclusively formed of Mexicans.

The recent executive draft of amendments to the law added that contracts might be made with "mixed economy" companies in which the government held control and that foreigners might participate in such companies. Later came the deletion of "foreign participation" clause which, Minister Gaxiola explained, was the result of typographical error in preparation of the new draft of amendments.

Argentina

Three Scattered Argentine Wildcats at Various Depths

In Argentina, Ultramar S.A.P.A. was drilling below 2700 feet in Piedra Clavada 1, wildcat in the far southern state of Santa Cruz. The test, 130 miles west of San Julian, was down for repairs two weeks ago. Another Ultramar wildcat, Cerro Lumbreras 1, in the state of Salta and 50 miles southeast of the city of Salta, was below 570 feet. In the state of Jujuy and 25 miles east of the city of Jujuy, the company's Saladillo 2 was drilling below 3800 feet.

Venezuela

Pantepec and Standard Have Production at Roble 4

In the El Roble field, Anzoategui state, eastern Venezuela, Pantepec Oil Company and Standard Oil Company of Venezuela obtained production in Roble 4. On March 28, simultaneous perforation tests at 10,008-018 and 9960-9990 feet yielded 40.5-gravity crude at the rate of 1078 barrels a day through a 3/8-inch choke. In a test made in two upper levels, 9733-45 and 9637-77 feet, production was secured at the rate of 1243 barrels through a 3/8-inch choke. Gas/oil ratio has not been determined, but probably is around 3000/1. Location for Roble 5 has been made 1200 meters northeast of Roble 4. A sixth Roble test will be put down southeast of Roble 3.

The Texas Company of Venezuela set casing at 9124 feet in Rincon Largo 1, wildcat on the Santa Ana structure in Anzoategui, eastern Venezuela. The test was down 9631 feet about two weeks ago, when preparations were made for perforating. The Societe Anonyme Las Mercedes, in which The Texas Company has an interest, was coring sand in Mercedes 1, in the state of Guarico, eastern Venezuela, about ten days ago. Hole was down 5366 feet.

Preparations for extensive development of Venezuelan Petroleum Company's producing property in Monagas, eastern Venezuela, are under way. In the annual report of the company, A. E. Watts, board chairman said, "In December, 1940, drilling was begun on a concession of about 24,000 acres near the town of Santa Barbara in the State of Monagas. On this location there was brought in, in February, a well which indicates the discovery of an oil field of major importance. Further development of the property is now under way, including the location of a pipe line, and improvement of a deep-water terminal property acquired some years ago about 100 miles northwest of the discovery well. Oil can be transported from this terminal to the Atlantic seaboard north of Hatteras in substantially the same time that is required by tanker from Houston, Texas, to the same destination."

Venezuelan Petroleum May Determine Extent of New Field

There is a prospect that the Venezuelan Petroleum Company may drill step-out wells to explore the extent of the new field opened by Santa Barbara 1, 10 miles west of the Jusepin field in eastern Venezuela. No new equipment is on the site yet, however.

H. R. Kunhardt and A. E. Watts, officials of Venezuelan Petroleum Company, were still in Venezuela last week.

Colombia

Colombia Barco Test Coring Below 7800 Feet

Late in March, Colombian Petroleum Company was down 7800 feet in Socuavo 1, wildcat on the Barco concession in Colombia. Cores were being taken. Another wildcat, South Sardinata 1, a few miles west of the Petrolia field, was still awaiting completion of a road to the location before drilling could begin. The company's Tres Bocas 2, on the Barco area, was rigging up.

Germany

German Oil Industry Under Single Company

A press dispatch from Berlin reports formation of Continental Oil Company, under German control, to make Europe "independent of the few big international oil concerns," notably American and British companies.

The company is composed of German producers and distributors of both natural and synthetic oils, and is under government control. The government's hold on the organization is emphasized in the placing of Walther Funk, German minister of economics, at the head of its administrative council. Several army officials are members of the council. Although leading German oil men are on the board of the company, German subsidiaries of British, American and Dutch companies are significantly omitted.

The company is to exercise exclusive control of German oil interests over all German-dominated Continental Europe, and is to extend from production through distribution.

EDUARDO SUAREZ, finance minister of Mexico, has left New York for Mexico City without having shed light on recent reports that a settlement of claims of oil companies against the Mexican government was in sight. In New York, Suarez said he knew nothing of an agreement, as did several oil company officials.

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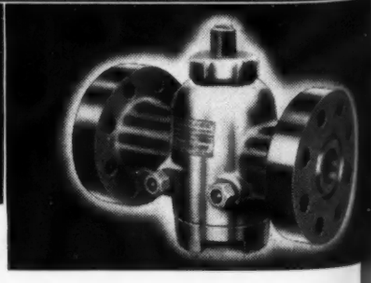

U. S. FIELD OPERATIONS

Illinois-Indiana

White County Wildcat to Test Three Pay Zones

In White County, two miles north of Maunie, Continental Oil Company cemented casing at W. F. Ackermann 1, NE NW NE 25-5s-10e, to test three pays. Hole was bottomed through a dry McClosky lime. Drillable casing was set opposite Cypress sand at 2652-72 feet, Benoist at 2824-44 feet, and the Aux Vases at 2944-62 feet.

Enthusiasm for the recently discovered New Haven field of White County, five miles east of New Haven, was dampened somewhat by a west offset to the discovery, Benedum-Trees' (Hiawatha Oil Company) R. S. Stinson 3, SE SE NW 19-7s-11e, which was shut down for orders at 2170 feet after the Tar Springs, the field's productive zone, apparently shaled out. The test may be carried to the Cypress.

First Cypress-sand well in Section 12-7s-8e, White County, Sinclair-Wyoming and Kingwood Oil Company's H. M. Porter 1, NE SW SW 12-7s-8e, has been completed with an initial of 36 barrels a day on pump from pay at 2579-85 feet. Eason Oil Company's Robert Bryant 1, NW SW NE 13-7s-8e, south of the discovery, was drilling at 2100 feet.

First Devonian test in the McKinley field of Washington County, Joe Murphy's Fee 2, NW NW NE 29-3s-4w, may be deepened in the lime as there was no show when plug was drilled out to 2250 feet, where saturation had been reported. The test has been closely watched, as it marked the first time in the history of the Illinois basin that a well dry in upper horizons appeared to be commercial in the Devonian. Production in the field is confined to the Benoist sand. Murphy topped Devonian at 2250 feet and found saturation immediately, he said.

An important Marion County wildcat in the Kinmumdy area, Swan-King Oil Company's Williams 1, SE NE SE 26-4n-2e, was abandoned at 1684 feet, still above Benoist sand. Glen Dean, first reliable marker in the area, was topped at 1647 feet, and because the test was running unfavorably low, the company decided to abandon. Several other dry holes have been drilled in the area, at one time highly regarded. The same rig will be moved to another wildcat location in the area, to be drilled by the same operator, Cemetery 1, SW SW SE SW 36-4n-2e.

A Clinton County wildcat 10 miles west of Centralia, B. E. Martin's Brinkman 1, SE 9-1n-2w, was dry in Cypress and Benoist sand, and was drilling below 1300 feet toward McClosky. The test is ½ mile east of a pool opener, J. F. Ashoff's Lampen 1, completed as a 50-barrel pumper in Cypress sand a few weeks ago.

Kreigh's Phoenix 1, SW NW 14-1n-1w, in the West Centralia field, Clinton County, was drilling at 1225 feet. The only producer in the area was completed several months ago in Cypress sand.

A Clinton County wildcat, E. A. Obering's Yantis 1, CE½ NW SE 27-3n-1w, northwest of Sandoval, was coring below 2800 feet, believed to be in Devonian lime. Upper horizons were dry.

Roger Bauman's P. W. Huber 1, NE NW NE 18-2w-11e, in the Albion field of Edwards County, Gulf Refining Company farmout northeast of production, has been completed in Aux Vases sand at 3029-59 feet for a small commercial well, first producer from this horizon in the field. The well was given a 50-quart shot.

Posey Wildcat Drilling Below Surface Casing

Gulf Refining Company's Aldrich Communitized 1, C SE NE NE 8-6s-14w, was a new Posey County wildcat start in Lynn Township, drilling below surface casing, 1¾ miles southeast of Gulf Refining Company's Aldrich 1, recently abandoned after drilling the St. Louis. Ten-inch surface casing was set to 278 feet. Parker Drilling Company is contractor.

In Black Township, Posey County, near Buffin, Gulf Refining Company's William Fred Schreiber 1, SE NE SE 23-6s-13w, was shut down for orders at 1909 feet, reported unfavorably low at top of the Chester series.

Drilling at 500 feet was a new wildcat start in Knox County, Decker Township, three miles northeast of Mt. Carmel, Illinois, S. C. Yingling's Mable Schneck 1, C W½ Donation 85 (projected section SE SW NE 10-1n-12w).

Drilling at 300 feet was J. G. Ladmer's Herbert Cokes 1, SE NE NE 12-7s-7e, in the Hatfield area of Spencer County, two miles northeast of Hatfield.

Showing for a small McClosky producer, estimated at 60 barrels a day, was a ½-mile extension test to College field, Point Township, Posey County, Roger Bauman's Ritter 1, SW SW SE 9-8s-14w. Pay at 2685-98 was acidized with 3000 gallons.

Drilling at 1400 feet was A. W. Cherry and Barron Kidd's Pocket Realty Company 2, SW SE SW 35-3s-14w, north offset to Pocket 1, new Aux Vases sand pool-opener two miles west of Griffin, Posey County, which initialed 150 barrels a day on pump. East ½ mile of Pocket 1, John T. Harris et al's Ballard Daugherty 1, NE NW NW 1-4s-14w, was shut down for orders at 2750 feet, apparently dry in the Aux Vases. It is a Superior Oil Company farmout.

Oklahoma-Kansas

Centrahoma Structure Test Drilling Toward Wilcox

Ramsey Petroleum Corporation's Harryman 1, C W½ SE NW 27-2n-9e, most northerly test on the Centrahoma structure, Coal County, encountered gas sand at 1225-55 feet, and blew out at 1227 feet. After the flow was killed with mud, the semi-wildcat again went out of control at 1234 feet, making an estimated 6,000,000 feet of gas. Operators again succeeded in killing and bit was rotating below 2500 feet. Cromwell sand is objective, although Wilcox sand may be tested.

Kerlyn Oil Company's Wareing 1, SW NE SW 33-19n-4w, southeast of Marshall pool, Logan County, logged Tonkawa sand at 4031-4103 feet, Perry gas sand at 4279-92 feet, and drilled to 4810 feet. After running electric log, operators decided to take drill-stem test in Layton.

Alma Oil Company et al's Replogle 1, NW SW NW 14-11n-10e, four miles east of Okemah, Okfuskee County, topped Cromwell sand at 3171 feet and penetrated to 3178 feet, obtaining a small show of oil. Electric log showed possibilities, and operators cemented 5½-inch casing at 3160 feet.

Initial Calvin-sand production for Fish pool, Seminole County, was proven at Mid-Continent Petroleum Corporation's Ferguson 2, NE NW NW 19-7n-8e, pumping 335 barrels of 29-gravity oil and 150 barrels of water in 24 hours. Hole was carried to 3491 feet in Cromwell sand, and plugged back to 1536 feet. Calvin sand was topped at 1340 feet, and casing perforated in basal section for production. The company began work at three offsets: Ferguson 3, SE NW NW 19-7n-8e, a south offset; Barnhart 1, NW SE NW 19-7n-8e, and Fish 2, SW NE NW 19-7n-8e.

Mid-Continent Petroleum Corporation's Fish 1, NW NE NW 19-7n-8e, set pipe at 1474 feet to test. Winona Oil Company's Chosholm 1, NE SW NW 19-7n-8e, logged basal pay section of Calvin sand at 1484-94 feet. It was showing for a small producer. Calvin sand is productive 3 miles east in the West Holdenville pool. In Fish pool, Booch sand, Wapanucka lime, Cromwell sand, Sandy dolomite and Wilcox sand are productive.

Creek Wildcat Completed

Roy Starr Oil & Gas Company completed a wildcat two miles west of Deep Fork pool, Creek County. Lumm 1-A, SE NW SE 8-14n-8e, logged Belle City 910 feet, Hogshooter 1315 feet, Layton 1400 feet, Big Lime 2358 feet, Oswego 2413 feet, Prue 2418 feet. Pink Lime 2780 feet, and Bartlesville 2844-57 feet. Hole was plugged back to 2480 feet, and casing perforated in Prue sand at 2464-70 and 2420-45 feet. Gas gauged 6,000,000 feet daily, with rock pressure of 615 pounds.

The Pure Oil Company revived activity in Osage Hominy pool at No. 171, NW SE SW 9-23n-8e, which for the

past few years has been pumping 2 barrels of oil and 14 barrels of water daily. After successive plug back jobs in Siliceous lime from 2612 to 2590 feet, and treatment with 1000 gallons of acid, it flowed 433 barrels the first 24 hours. Later it pumped steadily 120 barrels of 37.5-gravity oil daily, with a like amount of water. Original pay was in Tyner.

Thickening formations at J. E. Crosbie et al's Hogle 1, SEc SW 29-20-2e, five miles north of West Stillwater pool, Payne County, failed to decrease interest. This test logged Lower Pawhuska at 1500 feet, Hoover 1590 feet, Deer Creek 1710 feet, Upper Layton 3130-3230 feet, Oswego 3850 feet, Mississippi lime 4450-4605 feet, Sylvan shale 4628 feet, Viola 4699 feet, and Wilcox sand 4768 feet. Operators cored for a 4-foot recovery of saturated sand. Electric log was run for a drill-stem test.

Gardner Petroleum Company's Lowry 2, C N½ SE SW 12-19n-1w, four miles east of Orlando pool, Payne County, logged Dewey at 3160 feet and was rotating below 4250 feet. Discovery well on this lease produced from the Misener sand for approximately one year before going to water.

Stafford Wildcat Opens Lansing-Kansas City Pool

Stanolind Oil & Gas Company opened a new Lansing-Kansas City lime pool at Nagel 1, C E½ NE SW 3-24-15w, eight miles west of Rattlesnake pool and two miles north of Macksville, Stafford County. When Arbuckle lime at 4100-55 feet gave strong sulphur odor, operators cemented back to 3838 feet and set 5-inch casing. When plugs were drilled out to 2829 feet, hole filled 1600 feet with crude in one-half hour. Swab test recovered 30 barrels per hour for 3 hours. Later, the wildcat headed 44 barrels the first hour and failed to flow the second. Lansing lime topped at 3632 feet was acidized with 2000 gallons. Flow gauged 38 barrels the first hour, no water. Potential of 271 barrels daily was established in later tests.

Stanolind Oil & Gas Company's Billinger 1, C E½ SE SW 15-21-38w, Kearny County wildcat, was drilling below 4125 feet, encountering small show of oil in Topeka lime.

Chester Carlock et al's Mitchell 1, C E½ NE SW 6-15-14w, extended Big Creek pool, Russell County, ¾ mile southeast. Lansing-Kansas City lime was topped at 2945 feet, and when penetrated to 2970 feet, hole immediately filled with oil and began slopping over the casing. Tubing has been run and a potential test will be taken.

Bodine Drilling Company's Wilcutt 1, C E½ NE SE 4-21-13w, a west offset to the Shaeffer pool discovery, Stafford County, opened a new producing horizon. When perforated with 70 holes at 3396-3405 feet in Lansing lime, flow gauged 600 barrels in eight hours to establish a potential of 1800 barrels daily. Crude is 31-gravity, corrected. Pay was treated with 1000 gallons of acid. Hole is bottomed at 3565 feet. The discovery was completed in Arbuckle lime for 1175 barrels daily by Alf M. Landon, W. L. Faulkner and Atlantic Refining Company.

Two discovery wells were given potentials. Republic Natural Gas Company's Radenberg 1, C W½ NW SE 8-17-11w, two miles west of Kraft pool, Barton County, pumped 68 barrels in 24 hours from Arbuckle lime at 3318-32 feet. Crow Drilling Company, Derby Oil Company et al's Miller 1, C S½ SW SW 17-13-17w, Southwest Catherine pool discovery, Ellis County, established a pumping potential of 185 barrels of 30.5-gravity oil daily from Arbuckle lime at 3645-53 feet, treated with 500 gallons of acid.

Derby Oil Company and Lario Oil & Gas Company's Dick 1, C W½ SW NE 21-20-9w, south of Chase pool, Rice County, extended that pool or opened a new area. Arbuckle lime, topped at 3265 feet, was penetrated to 3272 feet. Potential of 454 barrels of oil, 3 percent water, was established on the pump. Pay was acidized with 500 gallons.

Forest City Basin

Test Hunton Lime Show In Nebraska Wildcat

National Petroleum Company, Guy Scott et al, were testing Oswald 1, C NW SW 15-2n-14e, five miles north of abandoned Dawson pool and 10 miles northwest of Falls City pool, Richardson County. Hunton lime was topped at 2540 feet, and a saturated core pulled at 2558-60 feet. Plugs were to be drilled.

Garetson & Kinsley et al's Bankers Life 1, C SW SW 30-3n-16e, southwest of Shubert pool discovery, Richardson County, topped Hunton lime at 2515 feet and cored at 2517-21 feet for a one-foot recovery of hard lime showing oil. Six-inch casing was cemented at 2515 feet, and when plugs were drilled to 2524 feet, hole filled with an undetermined amount of oil. W. H. Martgan et al's Smith 1, C E½ NW NW 31-3n-16e, pumped three barrels of fluid per hour, 50 percent water. Hole was being plugged back with lead wool to shut off water. Hunton lime was topped at 2513 feet, 5½-inch casing set at 2515 feet, and hole bottomed at 2539 feet.

The Ohio Oil Company was drilling below 1250 feet at Gerhardt 1, SW SE SE 7-1n-16e, Falls City pool. Indian Territory Illuminating Oil Company was rigging up tools to deepen Bankers Life 1, C NE SE 3-2n-15e, from 2473 feet to test Wilcox sand.

Johnson & Mitchell were moving in materials at Eickhoff 2, C NW NW 4-2n-16e, an offset to their first wildcat which showed some oil in Hunton lime.

In Ray County, Missouri, R. L. Campbell et al moved in derrick for Rust 1, C NW NW 21-53n-26w, wildcat scheduled to test Hunton lime.

The Ohio Oil Company set surface pipe at Wisnom 1, C NW NE 23-68n-41w, Fremont County, Iowa, wildcat staked on a 4000-acre block seismographed by the operator. Ike Taylor, Centralia, Illinois, was drilling with a rotary rig, and has contract for 2500 feet or Hunton lime.

Pryor & Lockhart and Stanolind Oil & Gas Company's Marr Estates 1, C E½ NE SW 32-68n-33w, Iowa wildcat, was making hole slowly below 1275 feet.

Continental Petroleum Company of Nebraska quit Gauchat 1, SW NW NE 26-6n-13e, at 1800 feet. after finding water in Mississippi lime at 1650-55 feet.

Palensky Brothers et al's Kalous 1, C SW SW 5-2n-13e, Richardson County, topped St. Peter (Wilcox sand) at 1853 feet, and was rotating below 1945 feet without shows. With an elevation of 1000 feet, this wildcat west of Humboldt logged Hunton at 985 feet and Viola at 1571 feet.

Uhri Oil Corporation's Ogle 1-A, NW SE SE 9-1n-14e, Dawson pool discovery, plugged back from 2260 feet to 2252 feet for a hole full of water and no oil. The well originally made a small producer in Hunton lime at 2258-60 feet.

Three wildcats were active in Missouri. Brin & Nathan's Decker 1, C NW NW 1-61n-38w, will deepen from old total depth of 2310 feet in Hunton lime to test the St. Peter sand. Harris & Holmes et-al's Newkirk 1, NEc 11-61n-11w, topped Mississippi lime at 200 feet and was drilling below 385 feet. J. Flory and J. A. Kilby's Meyer 1, SE NE NW 27-62n-39w, cemented 659 feet of 10-inch casing, but suspended operations temporarily at 845 feet.

Stanley County, South Dakota, Gains Leasing Activity

Sixty-one oil and gas leases on land in Stanley County, South Dakota, have been recorded by Magnolia Petroleum Company. The company already holds a large area under lease in North Dakota and northern South Dakota, but these are the first to be recorded by the firm in the central part of the state.

Magnolia Petroleum Company leases in Stanley County, estimated to involve over 25,000 acres, contribute to mounting oil and gas leasing activities in both North and South Dakota, particularly in the central section of the two states. More than 5,000,000 acres are reported under lease in the two states.

Leasing activity in the Dakotas spurted last summer when oil was discovered in Nebraska, not far south of the South Dakota line. The South Dakota Rural Credits Department has reported leasing of over 800,000 acres of state-owned land. Federal land, of which there is a large amount in the two states, also has received considerable attention.

Considerable seismographing and core-test work is expected to begin in a month or two in the two states. The Carter Oil Company, which last year drilled two stratigraphic tests and is drilling a third, has announced plans for drilling a deep test on holdings of Montana-Dakota Power Company in the Marmouth, North Dakota, area. Work is to start May 1 under an agreement requiring drilling to 10,000 feet, if necessary.

The state of South Dakota is also considering drilling a well on school endowment lands.

Companies reported active in preliminary investigation and leasing activities include, in addition to Magnolia Petroleum Company and The Carter Oil Company, Barnsdall Oil Company, Murphy Oil Company, The Pure Oil Company, Skelly Oil Company, Sinclair Oil Company, The Texas Company, The Ohio Oil Company, Yale Oil Company, Gulf Refining Company, Amerada Petroleum Corporation, Stanolind Oil & Gas Company, Shell Oil Company, Continental Oil Company, Mid-Continent Petroleum Corporation, Sun Oil Company, and Derby Oil Company.

Headquarters for lease men have been at Pierre and Mobridge in South Dakota; and Bismarck, Mandan and Minot in North Dakota.

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North and West Texas

Jones County Wildcat Indicates Pay at 2530 Feet

The southwestern Jones County wildcat of Harry Hines et al on the Wimberly tract, Block 87, DeWitt County School League 126, flowed oil by heads from new pay logged at 2530-33 feet. The flow was killed to run pipe for a production test. Soft lime zone at 2216-2233 feet showed for a pumper after using acid, but was passed up to try for the deeper pay that had been previously uncovered in the nearby Stith pool. Danciger Oil & Refineries, Inc.'s Kelso 2, northwest offset to the 2300-foot Stith pool discovery, recorded official potential gauge, pumping 101 barrels of oil from pay at 2670-2710 feet, having plugged back from a hole full of water at 2739-46 feet.

General Crude Oil Company's Flannigan 12, second deep test for the Royston field, Fisher County, has evolved into an unusual operation for the border line of the West and West Central Texas districts, since it is making a record penetration of the Cambrian in drilling hard sandstone at 6705 feet. An exceptionally thin section of Ellenberger was recorded at 6094-6410 feet, followed by the Cambrian, which showed water in the upper beds. Ordinarily, the Ellenberger is considered too thick to drill through, and comparatively few tests in West Central Texas have done so, while none have reached the Cambrian in West Texas. However, Plymouth Oil Company's McClure 1, Nolan County wildcat failure, logged water in the Cambrian at 7435-53 feet after recording 470-foot section of Ellenberger.

Lower Permian Appears Promising in Ector County

The search for new producing levels in the Lower Permian series in Ector County promises to bear fruit for M. A. Grisham and M. J. Delaney in drilling R. B. Cowden 1, C NE SE T&P Section 4, Block 45, T-1-N, offsetting 4400-foot production in the North Goldsmith pool, as saturation was logged at 6240-6335 and 6410-22 feet. The casing program called for landing 5½-inch at 6240 feet, but the string was cemented at 5260 feet due to inability to lower. The well proved dry in the Clear Fork lime, entered near the 5200-foot level with an elevation of 3305 feet, and yielded 10 barrels oil daily after using acid in broken saturation at 5655-5760 feet when bottomed at 5801 feet. The area is 2½ miles northwest of the Goldsmith field, and possibly on related structures, making the deep exploratory operations of special interest to producers in the larger field.

Phillips Petroleum Company's University-Andrews 1, 1¼ miles northeast of the Embar gas strike, Andrews County, and seven miles northeast of the above deep operation, has apparently missed the prospective oil zones, as it was drilling hard lime at 6960 feet. Small flow of gas with oil spray was developed with the aid of acid in broken lime at 5150-5510 feet.

Gulf Oil Corporation's University 1-F, SE SE Section 22, Block 31, Crane County wildcat, was drilling sandy-shale section at 10,490 feet in Simpson, topped near the 9600-foot level. The Simpson section has greater thickness than anticipated, based on correlation with the company's McElroy 103, near the Crane-Upton County line. Most of the University acreage near the above operation involves short-term leases, and an exceptionally big producer would be necessary to induce owners to start operations in time to forestall expirations. University 1-F has been carried beyond its original depth goal for geological information.

The Abell pool, Pecos County, gained another location, making 15 operations, including 12 drilling. Phillips Petroleum Company's Silverman 1, southeast offset to the discovery, prepared to perforate casing late last week after landing 7-inch on bottom at 5635 feet, or 3242 feet sub-sea. Favorable saturation was passed up in the 5100-foot Simpson, but the discovery horizon was partially shaled out.

George P. Livermore et al's Ownby-Shell 1, Yoakum County semi-wildcat three miles northeast of production in the Waples-Platter pool, increased its flow to 14½ barrels of pipe-line oil hourly, with gas/oil ratio of 6100/1, after deepening to 5348 feet. Top of broken pay was called at 5228 feet, or 4669 feet sub-sea.

Third Zone for Wilbarger County's Harrold Pool

Third producing horizon for the Harrold pool, northeastern Wilbarger County, was uncovered by Chas. Kadane and J. N. Fidel's Cochran 1, east offset to their 2900-foot discovery pumper, from saturated lime at 3268-74 feet. Casing will be run without a drill-stem test, as an analysis of the formation proved favorable for oil production. The partnership's Schlaffke 1, west offset to the discovery, was awaiting potential gauge after flowing at rate of 300 barrels daily following 100-quart nitro shot in an intermediate pay at 3165-82 feet. The 2900-foot pay was not productive at either of these tests.

Amerada Petroleum Corporation's Condon 1, a mile west of the north end of the Gargo pool, Wilbarger County, found the Cisco and Basal Canyon zones dry, and was drilling at 4425 feet to try for Strawn production. Humble Oil & Refining Company's McCaleb 1, north end of the pool, was awaiting production test of Strawn saturation at 4418-4544 feet, having passed up probable production in the Cisco, but the Basal Canyon was dry. Anderson & Pritchard Oil Corporation's Flaniken 1, offsetting production on the east edge of the pool, was attempting to complete in the Strawn at 4360-4476 feet.

Production from Ellenberger dolomite in the K-M-A field was expanded northeast through completion of Golding & Cochran's Preston 11-A-E, SWc SW H&TC Section 27, Block 7, flowing 98 barrels oil natural on 3-hour gauge through ¾-inch choke. Pay was logged at 4350-76 feet, with top of Ellenberger at 4345 feet. It is ¾ mile east by north of an outpost producer that logged top of Ellenberger 101 feet lower on sub-sea depth. Consolidated Oil Company's Ferguson 24, southeast corner Lot 10, W. H. Spillers Survey, provided a 1¼-mile east extension for the deep zone, in flowing 312 barrels of oil on 12-hour test after using 5000 gallons of acid at 4202-62 feet. Top of Ellenberger was logged at 4202 feet, showing greater structural relief than previous completions. This completion and that of Golding & Cochran the past week will cause owners of intermediate acreage to proceed with the development of the lower pay.

Fain-McGaha Oil Corporation, discoverer of the deep pay, has two wells in process of completion. Griffin 1-A-E, southeast of the discovery, was testing results of 2500-gallon acid treatment of pay at 4346-65 feet after plugging back from water at 4469 feet. Broken saturation was logged at intervals to the 4425-foot level. Top of Ellenberger was logged at 4338 feet. The company's Griffin 2-A-E, southwest of the discovery, entered the Ellenberger at 4341 feet, being five feet low to the above test, and yielded 150 feet of oil when tester was used at 4336-65 feet. Pipe will be run for completion at this depth.

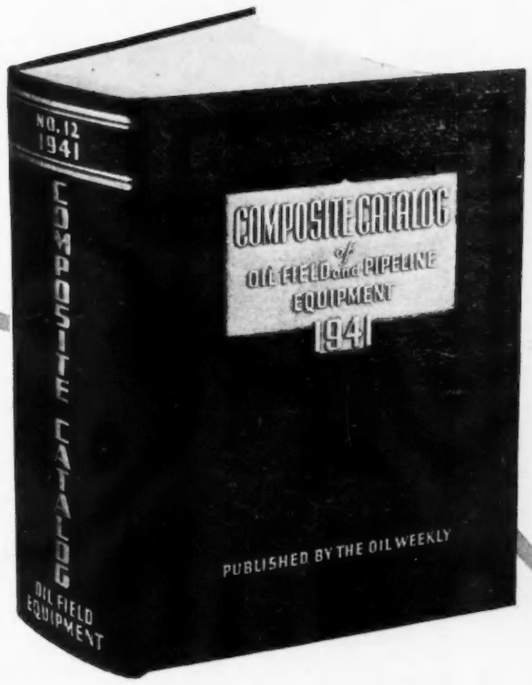
Second producer for the shallow pool opened late last month in western Cooke County by The Texas Company was pending. The company's Endres 1, northwest corner lease and south of the discovery, cored oil sand at 1903-11 feet, being 10 feet low, and landed casing for completion. The discovery on the Peter Bindel tract, Lot 1, F. Hughes Survey, pumped 234 barrels oil initial from sand at 1885-96 feet.

Clay Wildcat Flows by Heads

Shell Oil Company's Coleman 1-A, prospective Mississippian lime strike for Clay County, flowed heads of oil and water when agitated with bailer after perforating casing at 6322-32 feet and opposite lower Mississippian lime section, topped at 6126 feet. Water was also present with minor oil and gas show from perforations at 6380-90 feet. Plans are to perforate up the hole by stages, with the best production outlook at 6128-6221 feet. Coleman 1-A was carrier to Ellenberger at 6727-6837 feet.

Gulf Oil Corporation's Scaling 1, NE NW NW T&NO Section 3, involving the first try for Bend production within the Worsham field, eastern Clay County, cemented 7-inch pipe on top of Bend at 5600 feet after logging oil stain and odor to 5625 feet. It is located amidst abandoned Strawn producers, and entered the Bend series 60 feet high when correlated with nearest Bend producer in the Ringgold pool, and 311 feet high when compared to nearest producer in the Hapgood three-well pool. However, Gant's Stine 1, a failure 1⅓ miles west of the north end of the Ringgold pool, logged the Bend at 5565 feet, or 20 feet higher than Scaling 1.

Sinclair Prairie Oil Company's Clingingsmith 1, Montague County wildcat and 2½ miles southwest of nearest production in the Rogers & Rogers three-pay field, logged nominal oil saturation at intervals in the lower section of the Strawn, topped at 3130 feet, and was drilling at 5130 feet. Seitz, Comegys & Seitz, Inc.'s Ritchey 1, 1½ miles southeast of Belcherville, logged trace of oil saturation at 4335-51 feet, and was drilling at 4890 feet. Benson & Benson's



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THE COMPOSITE CATALOG

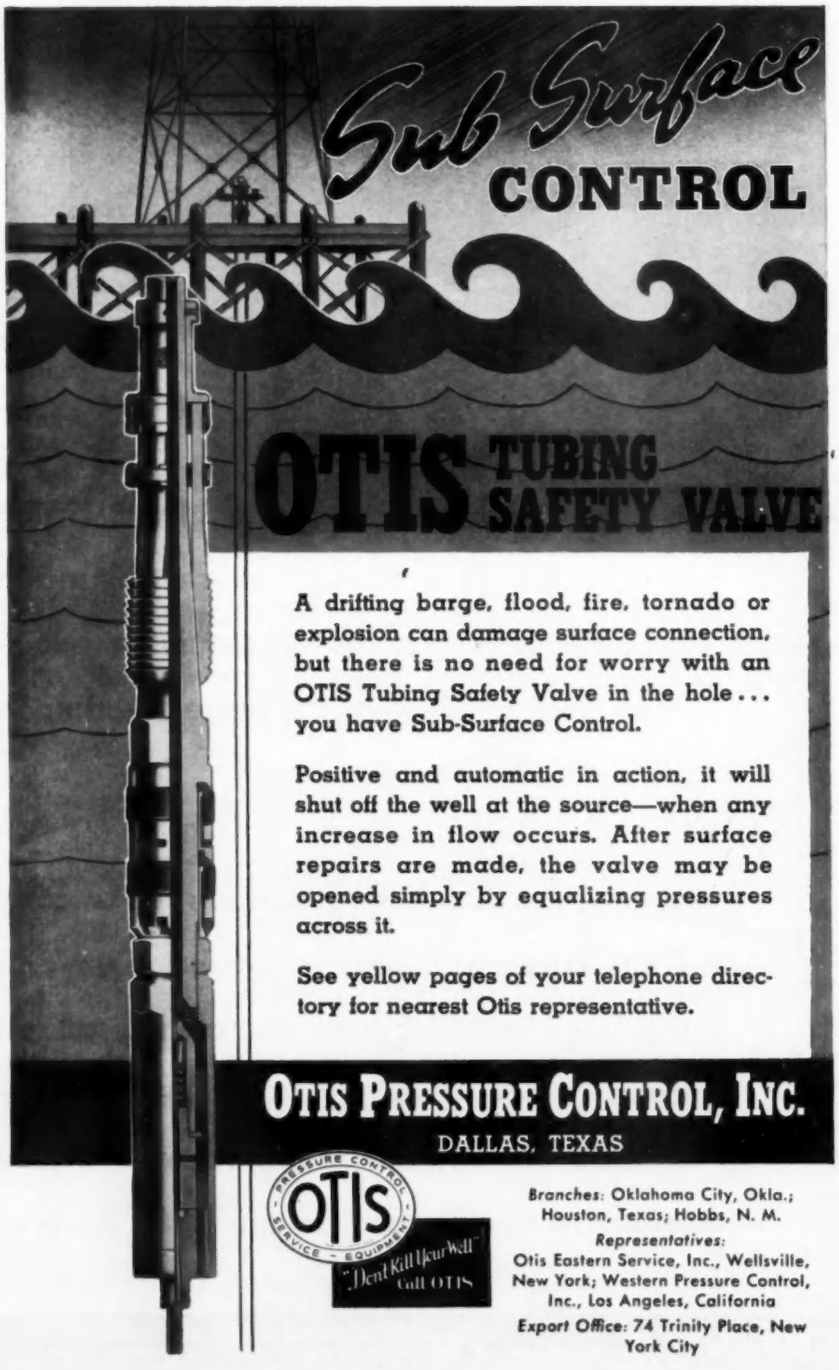
Seay 1, 1¾ miles southeast of Ringgold production, was drilling at 5045 feet.

Abandonment of Sinclair Prairie Oil Company's Bonita Northeast Unit 1 is the sixth failure for the Bonita pool, Montague County, leaving the southeast trend as the only possible opening for extensions. The new failure logged Ellenberger at 6412-66 feet, and was the fourth to reach this zone with negative results. Top of Ellenberger was logged at sub-sea depths ranging from 4863 to 5426 feet, or a maximum variation of 563 feet.

Petroleum Producers Company and Continental Oil Company's Leath 1, southeast outpost for the Asylum two-pay pool, Wichita County, lacked adequate porosity in Basal Strawn and Bend saturated zones to produce, and was abandoned at 5225 feet.

L. T. Burns et al's Larimore 1-A, deep test for northern Young County shallow oil belt, tested 60 feet of oil-cut mud and 60 feet of salt water on 1-hour drill-stem test at 4155-70 feet in Bend, topped at 4155 feet. Drilling was resumed to continue to the Ellenberger.

Magnolia Petroleum Company's Hayter 1, southwestern Archer County wildcat, was awaiting spudder to test promising oil saturation passed up in the Palo Pinto member of the Canyon series at 3077-99 feet, with 5½-inch pipe at 3163 feet. Casing will be perforated. This test proved dry in Ellenberger at 5396-5416 feet.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Southwest Texas

Wildcat Near Elgin Testing Encouraging Show

Wildcatting which has been under way for a number of years in the region of Elgin may reach its climax during the next few days with the testing of Marts & Beaven's Walker 1-A. The test encountered the Austin chalk at 2600 feet and showed oil and gas while drilling. The test was carried to about 3350 feet in Edwards limestone, where sulphur water was encountered. Plug was set to 2920 feet and casing was to be hung at 2600 feet. The test, while drilling, found several soft and porous spots in the chalk and it is likely that with acid treatment it will produce commercially. This test is located in a 38-acre lease in the George Glasscock survey and is four miles east of Elgin. Should this well produce, it would extend the Austin chalk trend of the Balcones fault zone more than 25 miles northward and would enhance the general pay through the area.

Baytex Oil Corporation and Atlantic Refining Company had a threatened blowout at 9357 feet in McCulloch 2, deep operation for the McCampbell, Aransas County. The hole is 2000 feet deeper than the present deepest producer on this structure. The blowout attempt occurred while drillers were pulling pipe from the hole to change bits. Heavy mud was pumped in for three hours before the well was killed. Bleeding off through chokes on the blowout preventer, it flowed a large volume of water and distillate under 1400 pounds working pressure, despite the heavy load of mud. The pressure was estimated as high as 7000 pounds.

W. B. Osborn and Mid-Continent Petroleum Corporation's Burow 1, two miles northeast of the Agua Dulce field, Nueces County, logged base of Oakville 26 feet higher than a distillate producer to the south and was coring below 6725 feet.

La Ward gained its first material set back since the discovery of production when Humble Oil & Refining Company's Bonnet 2, more than a mile southwest of production, found the discovery sand low at about 5280 feet. A drill-stem test was unsuccessful. Hole was cored into the Frio below 5425 feet and abandoned.

Oil shows were found in several wildcats in Duval, Webb and Jim Hogg counties. Forest Development Corporation's Ramirez 1 opened a field two miles west of the Colorado field and in Survey 271. It flowed an estimated 10,000,000 cubic feet of dry gas from perforations at 1998-2001 feet in the Mirando zone. Shut in, pressure built up to 600 pounds. Sal Vieja Oil Company's Pena 2, Survey 578, encountered a 12-foot sand section in the Manila zone around 2800 feet. It carried 2½ percent saturation, but drill-stem test recovered oily mud, and hole was abandoned at 3206 feet. The test was 2 miles northeast of the Patal field, Jim Hogg County.

Transwestern Oil Company's Garza 1, Section 80, one mile east of the Carolina-Texas field, Webb County, cored a shaly sand with oil odor at 2308-21 feet. A drill-stem test at 2304-23

feet recovered oily mud and the test was abandoned at 2400 feet.

E. R. Thomas Estate's Parr 1, Section 11, provided a one-mile east extension to the Muralla field of Duval County. The well had the top of the Pettus sand at 4711 feet and on two drill-stem tests showed oil and gas. It was drilled to just below 5000 feet and casing was set for completion. The first test at 4711-16 feet recovered 15 feet of oil-cut mud, 15 feet of dirty oil, 175 pounds pressure in 6 minutes. A second drill-stem test at 4717-20 feet developed 29 pounds working pressure and the recovery included 200 feet of oil and 60 feet of salt water.

Rincon field, Starr County, again was expanded and a new sand possibly opened by Continental Oil Company's Slick 20-A, Survey 485. Casing was perforated at 4350-58 feet and flow was estimated at 200 barrels of clean oil per day through ¼-inch choke. It is 933 feet southeast of Slick 17-A which produced from the 3900-foot sand.

East Texas

Upshur County Deep Project Coring Below 7300 Feet

Sun Oil Company's Henderson 1, first deep test for the Ore City geophysical prospect, Upshur County, was coring at 7300 feet, expecting to enter the Pettit within the next 100 feet. Both the Pettit and Travis Peak are potential zones, as the latter produces oil in the Pittsburgh pool to the northwest and the Pettit is the source of prolific gas-distillate wells to the southwest in the Willow Springs pool.

Delta Drilling Company's Kangerga 1, Rusk County wildcat four miles north of Henderson, was drilling at 7490 feet in Travis Peak, topped at 7395 feet. Nominal show of oil saturation was passed up at 5942 feet, and in the Pettit near the 7300-foot level.

The Texas Company's Greenwood 1-A, flank test for the Keechi salt dome, Anderson County, was eliminated as a Woodbine prospect through findings of salt water in drilling at 4960 feet. Top of sand was called near the 4820-foot level.

Humble Oil & Refining Company's Clift 1, east offset to the Hawkins field discovery pumper, logged top of the Woodbine oil sand at 4869 feet, with an elevation of 430 feet, and cored through the pay to 4916 feet so as to establish the water level. With pipe one foot off bottom, perforations made near the base of the sand yielded 80 barrels of fluid, averaging 10 percent water and 40 percent basic sediment, on 6-hour gauge. This zone was cemented and higher perforations were to be made late last week. The company's S. H. Moore 1, midway between this outpost and the gas cap zone, flowed 253 barrels oil through ¼-inch choke on 18-hour gauge from perforations at 4752-58 feet. Top of Woodbine series was called at 4304 feet, and broken pay prevailed at 4495-4795 feet, with an aggregate of 148 feet of pay. Hole was drilled to 4812 feet, or two feet into the Georgetown.

Humble Oil & Refining Company was speeding up its development program to keep abreast of offsets created by small tract owners within and adjacent to the townsite. The company has filed applications to drill 21 tests on the Texas & Pacific Railroad right-of-way across the George Brewer Survey, involving 63½ acres, and its twenty-second right-of-way site is scheduled for the east end of 7.82 acres in the Wideman Survey. Bobby Manziel et al's Bell 2, originally drilled to 2372 feet as a relief well for a sub-Clarksville gas blowout, has been deepened to 4814 feet. Pipe was landed on bottom to complete through perforations.

A. E. WALKER, president of National Supply Company, has been appointed coordinator of the defense contract service, Office of Production Management, for the Pittsburgh district. He has general supervision of a program to encourage and facilitate subcontracting in that area.

Texas Gulf Coast

Matagorda County Wildcat Has Oil at 8883 Feet

Stanolind Oil & Gas Company's Huebner 1 opened a new field three miles southwest of Bay City and the same distance west of Hamman field. It set 5½-inch casing at 9000 feet after drilling to 10,500 feet, perforated casing at 8883-86 feet in top of a Frio sand, and flowed, on the first gauge after cleaning itself, 65 barrels of 40.7-gravity oil in eight hours through 11/64-inch choke. Tubing pressure was 800 pounds. Perforations were made in the top part of a 8883-8912-foot sand body.

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Drilling Company and Hebert & Smith's American Realty Company 1, new test in the Buttermilk Slough area, a mile southeast of Sun Oil Company's Cavallin 1, started a water well, but the ground was still too soft for a rig to be moved in.

Skelly Oil Company's test on the northeast side of the Blessing field was coring for the gas sand from which the field produces.

Southwest of the Silsbee field, 1½ miles, Republic Production Company & Houston Oil Company's Elliott Fee 1 was preparing for a production test of the lower pay which, at Silsbee, produces in the Cockfield. After side-tracking and deflecting to redrill the sand, it found the sand at 6917-23 feet, total depth, and made a drill-stem test that showed seven stands of oil and no salt water. It may open a producing area separate from the Silsbee field itself.

Strake Petroleum, Inc.'s Griffith 1, at Halls Bayou in Brazoria County, was still trying to complete. It was swabbed in and was cleaning itself nicely when it started showing too much sand under high pressure and cut out the screen. Well was killed, and was trying to reset screen for another completion attempt.

El Tanque Hearing

Request for a higher allowable for wells in the El Tanque field, Starr County, will be considered at a hearing called by the Texas Railroad Commission for April 9. Operators have requested exemption from shutdowns and a higher production per well.

Louisiana Coast

New Gas-Distillate Area Opened in St. Mary Parish

Assurance of a new gas-distillate field for South Louisiana on the southeast flank of Belle Isle dome, St. Mary Parish, was given last week when Sun Oil Company shut in Belle Isle Corporation 1 at 10,043 feet in side-tracked hole, after flowing 20 barrels of 47.5-gravity distillate in 18 hours with 1,464,000 feet of gas with tubing pressure 3750 pounds and casing pressure 3150 pounds on a 10/64-inch choke. The well, in Section 6-18s-11e, was perforated at 9830-70 feet in sand at 9832-97 feet. This wildcat had considerable trouble with twist offs and with sticking pipe. Total depth of first hole was 11,117 feet.

Fohs Oil Company was trying to establish oil production from a new deep pay in the Gueydan shallow field, Vermilion Parish, where the company discovered 9000-foot production on the south flank. Mulvey Irrigation Company 4, just east of The Pure Oil Company's 4300-foot production and on top of the dome. At the close of the week, operator was running screen and liner for a production test of sand between casing seat at 4822 feet and bottom at 4855 feet. The company's Mulvey 3 had bit below 7375 feet, and The Pure Oil Company was drilling Alliance 7, west of Fohs Oil Company's tests, below 8100 feet.

Salt water was recovered from two sands in Amerada Petroleum Corporation's West Baton Rouge Parish test at 9981-86 and 9654-64 feet. The first test, through the lower set of perforations, made a flow of 200 barrels daily salt water with no oil on a 3/16-inch choke with tubing pressure 225 pounds. Test of the 9654-64-foot zone showed salt water with slight trace of distillate. Perforations were being squeezed for tests of upper shows.

A new sand-extension well was completed last week in the Chacahoula field, La Fourche Parish by Sun Oil Company's Cypress 3, which flowed 297 barrels daily from a new pay at 7767-7930 feet through 120 perforations at 7800-40 feet. The test is about 8800 feet west and little south of the main producing area in the field, between Cypress 1 and 2, of which No. 2 is producing gas-distillate from a deep 9300-foot sand. No. 1 was dry at 7400 feet. On the east flank of the dome and northeast of production, Texas Gulf Producing Company's Drexler 1 was drilling below 3000 feet in a side-tracked hole.

Very good drilling time has been made in one of Terrebonne Parish's most interesting wildcats. Sinclair Prairie Oil Company's Aragon Plantation 1, in the Bourg area, had bit at the end of the week near 8000 feet. Approximately 1000 feet a day has been drilled since plugs were drilled from surface casing. Another interesting well in the Parish is Gulf Refining Company's Picou 1, in the Lapyrouse area, which cemented 13⅜-inch surface pipe at 2500 feet.

North Louisiana

Wilcox Production Extension At Nebo Indicated by Test

Possible extension of the Wilcox horizon in the Nebo (Jena) field, LaSalle Parish, was indicated when Critchett & Woods' Jones 1, NW NW 41-7n-3e, near Catahoula Lake, showed some oil with salt water when 5½-inch casing cemented at 3600 feet was perforated. Total depth is 3963 feet. Operators planned to squeeze off perforations and test again.

Leasing and geophysical exploration continues in Grant, LaSalle and Winn Parishes. In the face of a number of wildcat failures farther east in Catahoula Parish the "play" has now veered to the west of the "Olla trend" into the three parishes mentioned. Winn Parish, farthest west, secured a new location when Nat Wissman spudded Quinn 1, SE SE 23-9n-6w.

Gulf Refining Company, Louark Producing Company, Atlantic Refining Company, Superior Oil Company, and Tide Water Associated Oil Company, besides a number of independents, are leasing and conducting geophysical activity in the Grant-LaSalle-Winn play.

Delta Drilling Company's Thigpen-Herold 1, C S½ 13-17n-16w, at Greenwood, Caddo Parish, showed salt water with considerable gas in production test at 2593-2620 feet, total depth 2981 feet. It was the company's second of a series of shallow wells in this area and is ⅜ mile north of the same company's shallow discovery gas well, Dunn 1, NE NW 24-17n-16w, completed last December.

Indications that the Travis Peak horizon may become productive of gas in the Joaquin-Logansport Glen Rose gas field were given in Grady Vaughn's Pickering 1, Brooks Survey, Shelby County, Texas, which showed 2 to 5 million cubic feet of gas daily in a drill-stem test at 6322-82 feet.

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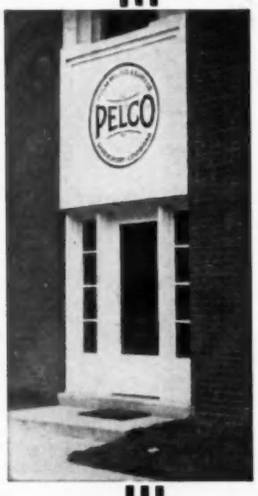

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Locations Staked for Two Deep Wildcat Tests

Four miles from production at Dorcheat, McAlester Fuel Company moved in materials for a deep wildcat at Franks 1, C SE SE 16-18-21, Columbia County. In Union County, Crescent Drilling Company and others started rigging for a dep wildcat, W. A. Burns 1, C NE SW 13-18-17.

Extending production two locations east at Dorcheat, McAlester Fuel Company's Barton 1, NW NW 14-18-22, completed at 8965 feet in Smackover lime, flowing 186 barrels in first 12 hours through 12/64-inch choke, with tubing and casing pressure equalized at 2222 pounds. Casing was perforated with 24 shots from 8954-56 feet. Members of the crew waded overflow water from Dorcheat Bayou for two miles to bring in the well. With elevation of 316 feet this test topped porosity at 8891 feet.

Rocky Mountain States

Extensions Given Cut Bank And Rock Creek Fields

Northern Montana's Cut Bank field was extended by A. B. Cobb & Company's Tribal 2-187, SW NW 19-32n-5w, which was swabbed-in with an initial production of 375 barrels daily. The well is a ½ mile west of production on the south extremity of the field in the newly developing Tribal pool. Tribal 2-187 had Sunburst sand at 2898-2910 feet; upper Cut Bank 2916-2950 feet, and lower Cut Bank (main pay) at 2950-2975 feet. Total depth is 2976 feet, one foot in the Ellis shale. Seven-inch production casing was set at 2922 feet. The well was drilled to 2926 feet last December, and shut-down to await Blackfeet Indian Tribal sale of leases in the area to complete. The company, at a recent sale, purchased tract 5, 96.5 acres, offsetting the extension well to the east, and tract 15, 80 acres, offsetting the new well to the south. The leases call for the commencement of a drilling well on each tract within the next 90 days.

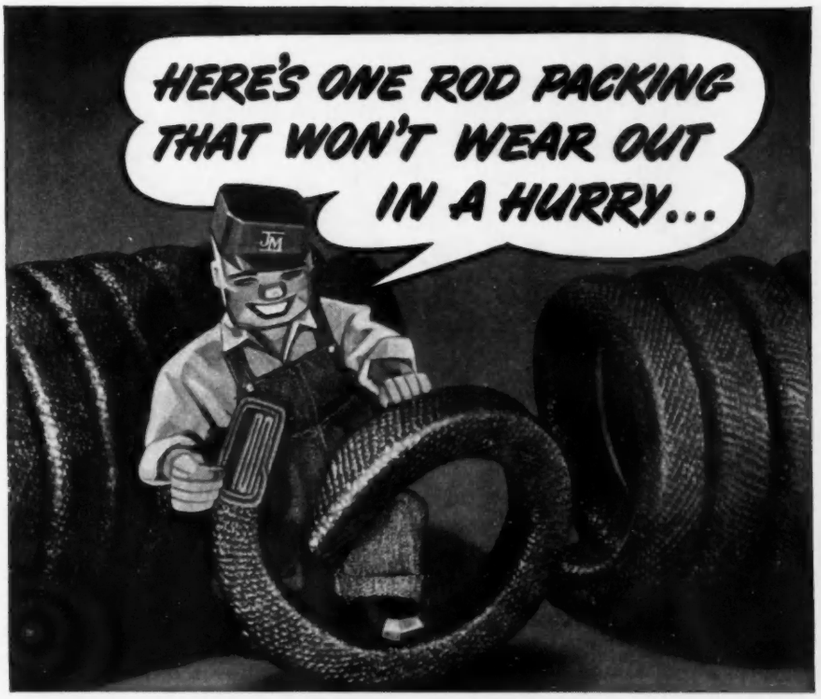
Another extension was provided by The Ohio Oil Company's State 12, C W½ NE 30-20n-78w, ¼ mile from production in the Rock Creek field, Carbon County, central Wyoming. The well was installing pumping equipment to complete at 3721 feet, after swabbing 22 barrels of oil per hour on a three-hour swabbing test, with no water. State 12 topped Frontier at 2750 feet, first Muddy at 3504 feet, second Muddy at 3600 feet, and the Dakota at 3674 feet. Five-inch production casing was set at 3601 feet. The well is ⅜ mile southeast of company's Lundy completion, a failure encountering water in the Dakota series six weeks ago and delimiting production on the northwest flank of the Rock Creek structure. The company was rigging up rotary for State 13, NW¼ NE¼ 30-20n-78w, ⅛ mile north and west of State 12.

Rumors that The Carter Oil Company would drill a deep test in the Cedar Creek gas field, on the southeastern end of the Baker-Glendive anticline in Fallon County, eastern Montana, were authenticated last week. In annual report to its stockholders, Fidelity Gas Company stated that The Carter Oil Company would spud a 10,000-foot test on the structure by May 1. It would provide a depth record for Montana. The Carter Oil Company has been carrying on an extensive leasing play and geophysical study through the Dakotas and into eastern Montana. The past June, the Fidelity Gas Company reported The Carter Oil Company took an option on Baker-Glendive acreage from Fidelity Gas Company, to drill a deep test pending outcome of geophysical survey. In November, following a seismograph study of the structure, The Carter Oil Company exercised its option and made contract to drill the deep well.

California

Shallow Heavy Oil Areas Commanding Attention

Indicative of the current trend of development interest in California was announcement last week of acquisition by William C. McDuffie and O. C. Feld of the old Palmer-Stendel Oil Corporation's properties in the Cat Canyon field of Santa Barbara County, which are to be rehabilitated and returned to production. Embracing approximately 2500 acres, the property has 22 producing wells pumping a heavy 10-gravity product from shallow depths. It is understood that additional drilling will be undertaken to increase the property's output. Acquisition closely follows an



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upward revision in posted prices for low-gravity crude, attributed to a growing scarcity of fuel grade oils.

McDuffie was at one time head of producing operations for Shell Oil Company, and more recently federal receiver for Richfield Oil Company before acquisition of control of that unit by Sinclair interests.

Elsewhere in the state, particularly in the older San Joaquin Valley producing areas such as Kern Front, Kern River and in the Midway-Maricopa district, extensive remedial work is being undertaken by several companies to increase the output of heavy crude. It is not expected, however, that sufficient new production of heavy oil will be developed under present price schedules to fully offset storage withdrawals, and that consequently there is a strong possibility for a further increase in heavy-oil price postings before the end of the year.

In the Raisin City area of Fresno County, Shell Oil Company and General Petroleum Corporation have blocked out extensive acreage for a wildcat play. It is reported a test well will be drilled in Section 18-15-18.

Honolulu Oil Corporation's No. 25-P, deep test in Section 10-32-24, Buena Vista Hills area of the Midway-Sunset district, was drilling in hard shale with streaks of hard sand at 13,038 feet. It is understood that so far the drill has failed to pick up the Vedder and that no showings of importance have been encountered. Discovery of a deep sand in this area would open a deep zone development program in the largest producing area on the coast.

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Michigan

Large Wells Indicate Sustained Drilling Program

Record potentials established by wells in two different fields increased prospects for sustained drilling. Sun Oil Company's Thayer 2, C W½ SE SW 29-20n-6w, Winterfield Township, Clare County, flowed 320 barrels natural from 5-inch casing at 3784 feet and averaged from 210 to 240 barrels a day the first five days. It was rated as the best producer to date in Winterfield Township, a district opened up for Dundee dolomite production last fall. Thayer 2 is the farthest west test drilled.

In Bay County, where comparatively small wells have been drilled since 1938 in Monitor and Kawkawlin Townships, Chapman Oil Company's Rechstiener 2, NE NW NE 3-14n-4e, flowed 340 barrels in 21 hours following acid treatment before exhausting storage. Initially, the well had pumped from 13 to 22 barrels a day natural from Dundee at 2894 feet. The stage method of treating was used after pumping about 10 days to break down the tight formation. It offsets by 660 feet a well pumping from 40 to 50 barrels per day.

Weber Oil Company's Fatum 1, SW SW SE 30-18n-10w, Osceola County, a half mile northeast of the discovery and the first follow-up completion, started off at 25 barrels an hour after a 1000-gallon acid treatment, but quickly dropped back to average 75 barrels the first day. Successive days it pumped from 30 to 45 barrels. Operators indicated they would reacidize with at least 3000 gallons. The well was producing from Dundee logged at 3504 and bottomed at 3517 feet. It pumped 31 barrels a day natural.

The Pure Oil Company was moving in a derrick 1320 feet south of Fatum 1, and has surveyed for an offset 660 feet west. Weber Oil Company and C. W. Teater both were expected to announce new locations for the district.

The Pure Oil Company's State A-2, Section 15-19n-3e, in the Adams field, Arenac County, was being deepened with 5-inch tools below 4871 feet, with the well making about three bailers of oil and nine bailers of water a day from 4265 feet. It is being drilled with a machine designed and rated for 3500-foot capacity. The company hopes to attain 5500 feet.

Gulf Refining Company was cleaning out to reset whipstock at 6265 feet in Bateson 1, Section 3-14n-4e, Bay County, after failing to get desired deflection on the first trip with the whipstock. The well originally was carried to 7776 feet, with side-tracking ordered after attempts to recover drill pipe below 6432 feet failed.

Sun Oil Company will attempt a plug-back from 3808 to 3150 feet on State B-1, C W½ NW NE 5-19n-6w, Clare County, to produce a Traverse oil pay at 3082-3131 feet. Dundee logged at 3743 feet failed to show commercially. The test is located a mile south of producing Dundee and Traverse wells in the West Winterfield pool.

Chapman Oil Company logged Dundee at 3918 feet in Reger 1, Section 3-17n-3w, Clare County, a wildcat, and was drilling at 3970 without oil saturation in the objective formation.

UNITED STATES WELL COMPLETIONS

Arkansas

Company, Well and Location	Init. Prod. Bbls.	Depth
Columbia County (Dorcheat)—		
McAlester Fuel Co., Barton 1, 14-18-22	372	8965
Columbia County (Wildcat)—		
Turner, O'Farrel & Crow, Green 1, 11-15-20	•	3487
La Fayette County (McKamie)—		
Atlantic Ref. Co., Bodcaw Lbr. Co. 3, 29-17-23	672	9980
Miller County (Wildcat)—		
Louark Prod. Co., Hedrick 1, 27-19-27	•	6505
Ouachita County (Bragg)—		
Fred J. Hughes, Rath & Cartier 1, 33-13-18	•	2506
Sevier County (Wildcat)—		
Gramp Oil Co., Phillips 2, 26-9s-30w	•	1043
Union County (Urbana)—		
Marine Oil Co., Ballard 1, 10-18-13.	•	3550
Union County (Rainbow City-Champagnolle)—		
Kinard Curtis et al, Rowland 1, 15-17-14	30	2829

California

Company, Well and Location	Init. Prod. Bbls.	Depth
Fresno County (Coalinga Eocene)—		
Standard, No. 24-17F	589	8326
Fresno County (Coalinga Northeast)—		
Pure Oil, Schwinn 2	205	8326
Kern County (Coles Levee)—		
Union, Kernco 72-11	480	9956
Kern County (Edison)—		
Monterey Explor. Co., Shell-Duff 15	70	3520
Kern County (Greeley)—		
Standard, KCL 12-13	3200	11,510
Kern County (Rio Bravo)—		
Superior, Smith 4	1675	11,440
Kern County (Strand)—		
Tide Water, KCL E-25-7	910	12,828
Kern County (Ten Sections)—		
Shell, KCL A-4-29	892	8210
Humboldt County (No. California)—		
M. B. Daly, No. 1	•	900
Los Angeles County (Wilmington)—		
Union Pacific, UP 176	259	2820
Orange County (Huntington Beach)—		
Signal, Signal-Bolsa 2	156	3982
Signal-Bolsa 23-A	313	4650
Santa Barbara County (Santa Maria Valley)—		
Union, Fleisher 1	823	4822
Stinson 2	68	5579
Ventura County (Ventura Avenue)—		
Tide Water	189	7700

•Failures; †Junked; ¶Million cu. ft. gas.

OLD WELLS DEEPENED

Company, Well and Location	Init. Prod. Bbls.	Depth
Los Angeles County (Wilmington)—		
D. D. Dunlap, No. "W" 3 (otd 2630)	200	3595
Royalty Ser. Corp., Comm. 5 (otd 2618)	480	3320
Selegna Pet. Corp., Wilmington 7 (otd 3020)	60	3320
O. M. Slosson, Chuck 1 (otd 3345).	50	5762

Illinois

Company, Well and Location	Init. Prod. Bbls.	Depth
Edgar County—		
A. L. Bedell, Adams 1, nw se sw 27-13n-13w	•	1050
Fayette County—		
Vandenbark, Griffith 4, nw nw se 17-7n-3e	75	1541
Blalock & Walters, Harding 2, se se nw 18-7n-3e	•	1601
John Pummill, Isbell 1, nw ne sw 33-8n-1w	•	1507
Carter, Richards 2, ne se sw 1-8n-3e	84	1513
Wright 14, ne nw se 20-8n-3e (pb 1538)	120	1538
Franklin County—		
Adkins, Orient 3, sw sw se 24-6s-2e	310	2150
McKemie 1, nw ne nw ne 25-6s-2e	350	2168
Manley, Shumate 1, nw nw se se 24-6s-2e	325	2147
Shell, Doty 1, nw ne nw nw 25-6s-2e	24	2162
Gallatin County—		
Carter, Kuder 3, ne nw ne 4-8s-8e (pb 1714)	13	1724
Rister 2, se se nw 4-8s-8e	330	1719
Seaboard, Colnon 1, c nw nw se 4-8s-8e	18	1720
Hamilton County—		
Hall-Jordan, Deerlake 2, se nw ne 34-3s-5e	1134	3324
Sinclair-Wyoming, Morris 1, se se nw 27-5s-6e	•	3068
Friel 17, ne c se 34-5s-6e	116	3046
Friel 18, sw se sw 34-5s-6e	551	3068
McBride, York 1, nw ne se ne 34-5s-6e	30	3031
Jasper County—		
Pure, Kermicle 1, c e½ nw nw 4-5n-10e	227	2825
Rohr Consol. 2, c w½ se ne 5-5n-10e	299	2820
Byrnes 1, e½ nw sw 8-5n-10e	1181	2831
Varner Consol. 2, c w½ sw sw 30-5n-10e	•	2900
McClane 1, e½ se se 8-6n-10e	326	2810
Marion County—		
Shell, Adams 1, se se sw 7-3n-10e.	89	1471
Davidson 1, ne ne ne 34-4n-1e (pb 1365)	87	1737
Adams, Davidson 3, sw nw se 21-4n-1e	37	1445
Schoenfeld et al, swc se se 27-4n-1e	15	1370
Stevens 2, s½ se 27-4n-1e	35	1362
Montgomery County—		
Sharp et al, Calafetti 1, c se sw nw 27-7n-4w	•	620
Keith et al, Varver 1, se ne se sw 3-8n-5w (pb 646)	•	674
Richland County—		
Shaffer et al, Pflaum 1, s½ se nw 33-4n-9e (pb 2646)	20	2775
Wabash County—		
Markham Dr. Co., Hopkins 1, nw nw sw 6-1n-11w	•	2239
G. R. Hayes et al, N. Y. Cent. R.R. 1, 1-1n-12w	117	2042
J. Young, Stillwell 9, nwc se 1-1n-12w	30	2012
T. A. Farrell, Price Est. 1, se sw se ne 14-1n-12w	•	2382
Harvey-Lobree, Strine 1, nw ne nw 13-1n-14w	•	2993
J. C. Meyers, Harris 3, se sw se 17-1s-12w	128	2058
R. W. O'Meara, Harris 5, se sw se se 17-1s-12w	40	2067
Hall-Jordan, Hein 1, se sw sw ne 20-1n-12w	96	2059
L. B. Jackson, Jackquees 3, ne se ne ne 20-1s-12w	45	2074
Alka 1, nwc sw ne 34-1s-13w	60	1955
Roberts, Crumren-Hudson 2, nw sw nw ne 20-1s-12w	45	2054
J. W. McCummins, Grumdon 1, c nw se ne 34-1s-13w	175	2640
Wayne County—		
John W. Sanders et al, Gill 1, sec ne nw 24-2n-7e	32	3072
Diamond-Half Oil Co., Bonting 1, s½ nw se 35-1s-7e	•	3340
I. G. Wadkins Drilling Co., Rossler 2, s½ ne se 36-1s-7e	•	3360
White County—		
Buell & Herndon, Bond 8, ne se nw ne 8-4s-14w	325	2841
Cherry & Kidd, Grey 1, ne se se 8-4s-14w (pb 2829)	158	2841
Strouble Bros., Boultinghouse 1, nw se nw 16-4s-14w	45	2860
Pruitt et al, Boultinghouse 3, c se se ne 17-4s-14w	42	2849
Ryan, Bramlett 8, nwc se sw 17-4s-14w	65	2277
W. W. Grey, Fee 4, se ne ne 20-4s-14w	300	2837
Skelly, Crossville 4, se nw ne 20-4s-14w	20	2849
Daly Trs. 2, n½ ne nw 20-4s-14w	80	3088
Travis, Davis 1, se sw ne 30-4s-9e.	•	3495
Hiawatha, Stinson 1, sw sw ne 19-7s-11e	107	2123
Kingwood & Exchange, Porter 1, ne sw sw 12-7s-8e (pb 2660)	36	3068

[*Continued on next page*]

Summary of Drilling Operations in the United States, Week Ended April 5, 1941

	WELLS COMPLETED								*PERMITS FOR NEW WELLS				
		New Wells Drilled for Oil and Gas											
	Total for Week	Oil Wells	Gas Wells	Failures	†Miscellaneous	Initial Production	Total 1941	Total this Date 1940	This Week	Total this Month	Total 1941	Total this Date 1940	Year Total 1940
Arkansas	8	3	....	5	....	1,074	42	54	3	3	36	35	153
California	19	18	....	1	....	10,619	287	280	22	22	235	276	1,042
Colorado	.....	.....	....	.....	.....	.....	3	3	.....	.....	.....	.....	.....
Illinois	61	44	....	13	4	8,304	802	933	72	72	1,010	1,033	4,532
Indiana	.....	.....	....	.....	.....	.....	114	108	.....	.....	.....	.....	.....
Kansas	42	24	3	11	4	4,758	502	399	43	43	467	467	2,048
Kentucky	.....	.....	....	.....	.....	.....	63	67	.....	.....	.....	.....	.....
Louisiana	22	17	3	2	....	3,303	350	411	35	35	395	397	1,658
Michigan	18	10	2	6	....	1,113	209	373	13	13	205	340	1,093
Mississippi	7	6	....	1	....	4,705	45	37	....	.....	....	.....	.....
Missouri*	.....	.....	....	.....	....	.....	1	1	....	.....	....	.....	26
Montana	7	6	....	1	....	1,160	55	31	....	.....	....	.....	.....
Nebraska*	.....	.....	....	.....	....	.....	23	....	....	.....	....	17	69
New Mexico	5	1	1	3	....	256	89	207	8	8	103	204	559
New York	11	8	....	....	3	47	169	302	....	.....	....	.....	.....
Ohio	16	3	8	5	....	151	372	223	....	.....	....	.....	.....
Oklahoma	34	19	1	10	4	12,155	494	578	48	48	457	536	1,888
Pennsylvania	34	25	4	....	5	25	529	996	....	.....	....	.....	.....
South Dakota	.....	....	....	....	....	.....	....	1	....	.....	....	.....	.....
Tennessee	.....	.....	....	.....	....	.....	....	7	....	.....	....	.....	.....
Texas	184	131	6	46	1	77,792	2,316	2,831	222	222	2,584	3,083	11,170
West Virginia	5	1	3	1	....	25	179	162	....	.....	....	140	782
Wyoming	1	1	....	....	....	600	24	43	....	.....	....	.....	1
Total this week	474	317	31	105	21	126,087	6,668	8,047	466	466	5,511	6,511	25,021
Total last week	466	306	44 •	90	26	131,066	6,194	7,424	452	2,158	5,045	5,906	25,021
Total this year	6,668	4,241	604	1,547	276	2,023,537	....	.....	....	.....	....	.....	.....

* This tabulation includes those states where weekly data are available; figures for Missouri date from August 10, 1940; Nebraska from August 3, 1940.
† Includes old wells deepened, water-intake, gas input and salt water disposal wells.

United States Well Completions—*Continued*

ILLINOIS—Continued

OLD WELLS DEEPENED

DeKalb County—
J. E. Milburn et al, Erass 1, nwc se 22-38n-3e (otd 520)..... * 1700
Hamilton County—
Duncan, Zellars 1, se ne ne 34-3s-5e (otd 3359)..... 205 3420
Marion County—
Texas, Tate 21, sw ne nw nw 5-1n-2e (otd 4343)..... 54 5655
Hays 8, sw ne nw nw 32-2n-2e (otd 3355)..... 302 4578

Kansas

Barton County—
Cities Service, Kosar 2, c n½ nw se 5-16-13w 3000 3378
Lauck-Moncrief, Doll 1, c s½ sw se 36-18-11w ..... * 3568
Butler County—
Cromwell & Lewis, Shriver 4, swc nw 34-27-6e 18 3099
Ellis County—
Deep Rock, Baumer 33, c w½ ne se 27-11-17w 150 3490
Gulf, Cress 2, c n½ sw se se 12-11-17w 2940 3303
Darby, Hadley "B" 6, c s½ nw nw 13-11-18w 3000 3353
Ellsworth County—
Derby, Peterman 1, c s½ se se 11-17-10w 200 3285
Janssen 1, c w½ sw ne 29-17-10w 400 3286
Central, Splitter 2, c e½ sw nw 19-17-9w ..... * 3277
Continental et al, Steinberg 7, c s½ s½ nw 27-17-8w 3000 3227
Fuller 5, c e½ se se 28-17-8w..3000 3229
Greenwood County—
Saco Oil Co., Adams 1, sw ne nw 27-26-13e ..... * 1557
Able & James, Hoehimer 1, ne nec sw 17-28-11e ..... * 1235
Harvey County—
Valley Osage Oil Co., Frederick 2, c n½ nw nw 17-23-3w..... * 3398
Marion County—
Rex-Morris, Kappan 1, c n½ nw ne 16-18-4e ..... * 2461
W. C. Ritchey 1-B, nwc ne 10-17-4e * 2410
Ring-Mac Oil Co., Novak 1, nec 32-17-4e 496 2410
Leavenworth County—
McLaughlin et al, Thorp 1, c ne ne 27-10-20e ..... * 3187
Reno County—
Landon, Union Central Life 3, c w½ nw sw 7-24-10w (pb 3730)..1595 3767
Rice County—
Bay, Mitchell 2, c e½ w½ sw 3-20-9w 539 3224
Continental et al, Lansing "A" 6, ne nw sw 25-18-8w 1988 3229
Herndon Dr. Co., Lola 1, c w½ sw sw 19-20-10w 236 3276
Central et al, Wright 1, c e½ se se 13-20-6w 70 3336
Ingling et al, Fair 1-A, nec 28-21-9w .....¶8.5 3360
Russell County—
Isern et al, Shultz 1, c n½ nw ne 16-15-13w 1881 3055
Sinclair-Prairie et al, Sellens 3, c e½ ne se 35-15-13w..... * 3380
Central, Foster "B" 1-A, c s½ sw ne 3-14-15w 692 3137
Gulf, Rusch 1, c w½ sw sw 29-14-14w 200 3198
Texon, Bunker Hill Bank 4, c s½ s½ ne 26-14-13w 427 2905
Jones & Shelburne, Rein "A" 2, c n½ sw sw 27-14-13w 3390 2887
Skelly, Phinney 4, c s½ se nw 30-14-13w 259 2951
Haynes & Anschultz et al, Driscoll "B" 1, c s½ nw se 30-15-11w.... * 3270
Stafford County—
Landon, Atlantic et al, Shaeffer 1, c w½ nw sw 3-21-13w.....1175 3552
Stanolind, Ferris "A" 4, c e½ nw se 15-24-11w 411 3820
Cities Service, Stimatze 2, c e½ nw sw 15-25-14w 2910 3802
Stevens County—
Stevens County O. & G. Co., Smith 1, sw swc se 25-31-39w.....¶25.6 2565
Kunn 1, se sec ne 34-31-39w....¶13.9 2573
Sumner County—
Benedum-Trees, Landwher 1, c e½ se se 17-32-1e ..... * 4200

OLD WELLS DEEPENED

Barton County—
Texas, Henning 1, nec nw 22-19-11w (otd 3115) 3000 3145
Gulf, Schartz 3, c e½ sw sw 18-20-11w (otd 3312) (pb 3314)..1643 3322
Harvey County—
Hall-Jordan, Horty 1, c w½ w½ nw 18-23-3w (otd 3361)..... 115 3380

SALT WATER DISPOSAL WELL

Barton County—
Continental, Scheufler 5, nec nw 24-20-12w 3820

North Louisiana

Caddo Parish (Pine Island)—
Smith Hines, Gloyd 1, 18-20n-15w.. 25 1574
Weaver-Perry Oil Co., Pardue 4, 31-21n-15w 41 1554
De Soto Parish (Logansport-Joaquin)—
Southern Prod. Co., Frost Lr. Industries 1, 13-11n-16w.....¶112.0 4943
La Salle Parish (Olla)—
Arkansas Fuel Oil, Kees E-1, 7-10n-3e 100 2250
Placid Oil Co., L. Cent. Lbr. Co. 74, 2-9n-2e 150 2429

South Louisiana

Acadia Parish (North Crowley)—
Humble, Link 1 ..... * 9820
Ascension Parish (Darrow Dome)—
Humble, Community 36 ..... 144 4571
Calcasieu Parish (Sulphur Mines)—
Union Sulphur, Fee 876 ..... 214 6127
Fee 877 ..... 110 5490
Cameron Parish (Lakeside)—
Lisbon-Iberia, Calcasieu Nat. Bank 1 .....¶4.0 & 85 10,685
Cameron Parish (Chalkley)—
Shell Oil Co., Laccassine B-1..... 263 10,129
Evangeline Parish (Ville Platte)—
Continental, Tate 8..... 147 10,171
Vidrine 1 ..... 376 10,281
Iberville Parish (Bayou Blue)—
Superior, Schwing 10 ..... 170 5760
LaFourche Parish (Chacahoula)—
Sun, Cypress 3 ..... 297 8283
LaFourche Parish (Golden Meadows)—
Brown-Woods, State 8..... 108 5510
Texas Co., LaTerre 8..... 362 10,485
Plaquemines Parish (Grand Bay)—
Gulf, Grand Prairie 12-A 132 8745
Plaquemines Parish (Quarantine Bay)—
Gulf, Plaquemines Ld. Co. A-5.... 480 9503
St. Martin Parish (Anse La Butte)—
Stanolind, Castile 1 ..... 194 7103
St. Martin Parish (Sec. 28)—
Superior, St. Martin Ld. Co. 1-B .....¶1.5 & 16 10,527
St. Mary Parish (Charenton)—
Pan American, South Coast 10.... * 2811

Michigan

Allegan County—
A. R. Urion, Voss 1, sw sw sw 35-1n-16w 60 1102
Guy Wray, Tucker 1, se sw nw 33-2n-16w ..... * 1256
H. L. Wheeler, Penshorn 1, ne nw nw 21-1n-13w 50 1348
Clapsaddle & Harris, Beldon A-1, se se ne 30-1n-13w 60 1361
Barry County—
Wolverine Nat. Gas Corp., Dickerson 1, ne ne ne 4-1n-9w..... * 1885
Bay County—
Chapman Oil Co., Rechstiener 2, ne nw ne 3-14n-4e 340 2894
Clare County—
Sun, Thayer 2, c w se sw 29-20n-6w 320 3784
Kalamazoo County—
W. S. Cook, Mott 1, sw sw sw 2-1s-12w ..... * 1405
Midland County—
Pure, Narmore 40, ne ne ne 16-13n-1w 150 3402
Osceola County—
Weber Oil Co., Fatum 1, sw sw se 30-18n-10w 75 3517
Taggart Bros. Co., Heynor 5, c nw 30-18n-10w .....¶13.0 1205
Rader 6, c sw 30-18n-10w.....¶11.0 1203
Ottawa County—
Turner Pet. Co., White 5, sw se sw 14-7n-13w 25 1884
Smith Pet. Co., Kurek 4, sw nw ne 34-7n-13w 15 1869
Makowjecki 7, ne nw sw 34-7n-13w 18 1823
Van Buren County—
Lank & Lewis, Holmes 1, nw se sw 15-1s-14w ..... * 1265
C. C. Goff, Adkins 1, ne nw nw 23-1s-14w ..... * 1325
Globe Dr. Co., Love 1, se sw sw 11-1s-15w ..... * 1265

Montana

Glacier County (Cut Bank)—
Cons. Gas. Co., Tribal 4, lot 8, 10-34n-6w 180 2968
Santa Rita O. & G. Co. Jacobson 2, c nw nw 17-33n-5w..... 300 2960
Tarrant-Wiley, Jones 2 se nw sw 31-34n-5w ..... * 2855
Texas Co., Willis 1, sw ne 19-32n-5w 310 2836
Glacier Prod. Co., McDougall 3, c nw nw 31-34n-5w 46 2862
Van Ormer 5, ne nw 17-33n-5w.. 320 2925
Toole County (Kevin-Sunburst)—
Hi-Gravity Oil Prod. Co., Government 1, se nw ne 19-35n-3w.... 4 2200

Mississippi

Yazoo County (Tinsley Dome)—
Hassie Hunt, Stutts 3, 30-10n-2w.. 850 5091
Smith 1, 31-10n-2w 875 5507
Stutts 4, 30-10n-2w 980 5096
J. P. Evans, Johnson 1, 31-10n-2w. 980 5048
P. J. Ruman, Moore-Robertson 1, 29-10n-2w 720 5140
Moore-Robertson A-1, 29-10n-2w. 300 5042
W. B. Johnson Dr. Co., Robertson C-1, 20-10n-2w ..... * 5200

New Mexico

Eddy County (Wildcat)—
Mac T. Anderson et al, Brainard 1, se ne ne 26-18s-27e..... * 2831
Eddy County—
Carper-Keohane-Saunders, McFadden 4, nwc ne 3-19s-31e..... 256 2665
Lea County (West Eunice)—
Wilson Oil Co., State-Shell 11, c nw nw 7-21s-35e..... * 3897
San Juan County—
Southern Union Gas Co., Reid 3, c se sw 12-29n-12w .....¶1.3 1886
Chaves County (Roswell Area)—
A. F. Pierce, J. C. Franks 1, ne nw nw 17-9s-25e ..... * 1120

New York

Allegany County—
Franchot Oil Co., Murphy farm, Bolivar 6 1446
Messer Oil Co., Shaner farm, Bolivar 5 1421
Dawson Oil Co., Brown farm, Scio. 6 1348
Bradley Prod. Corp., Duke farm, Alma 5 1462
L. H. Thornton et al, Fassett farm, Willing 5 1334
Gray Oil Co., Gray farm, Genesee. 8 1448
Forest Oil Co., Mattock farm, Wirt 5 1353
F. J. Wilson, Burdick farm, Wirt.. 7 1428

WATER INTAKE WELLS

Allegany County—
Ebenezer Oil Co., Norton farm, Bolivar 1540
Bradley Prod. Co., Duke farm, Alma 1461
L. H. Thornton et al, Smith farm, Willing 1319

Ohio

Guernsey County—
McCullough, Steel 1..... * 1331
Knox County—
Brooks Johnson, Miller 1.....¶0.93 2885
Licking County—
Penick et al, Lynn 3.....¶0.88 2210
C. A. Davis, Wilken 2.....¶0.48 2599
Meigs County—
T. W. Bengel, Groff 1.....¶0.36 655
Muskingum County—
Wittmer Co., Frick 2.....¶0.6 3780
Gas Prod. Co. of O., Meyer 1..... * 4208
Noble County—
S. L. Skinner et al, Haga 1..... 3 973
Yokery Valley, Long 2.....¶0.18 1603
Marion O. & G. Co., Franklin 1... * 1727
Perry County—
L. L. Dittoe et al, Beachman 6.... 78 3360
B. G. Davis et al, Beachman 6.¶0.1 & 70 3370
H. L. Altier & Sons, Gladen 11....¶0.15 1088
C. Z. Ruth, Rodgers 25..... * 1176
Preston Oil, Boring 1..... * 2785
Washington County—
Schramm Bros., Christopher 12....¶0.03 1377

Oklahoma

Carter County—
S. & D. Doube, Fee 1, nw sw sw 17-4s-2w 516 2014
Fee 2, nw nw sw sw 17-4s-2w.... 612 2134
A. L. Tucker, Shores 1, sw swc 17-4s-2w 480 2039
W. Neustadt, Choate 1, c n½ se se 18-4s-2w 330 2092
W. H. Smith, Ward 2, nw ne ne 19-4s-2w 37 2278
Ward 10, nec 19-4s-2w 975 2048
Dixon et al, Woodsworth 1-A, csl nw ne ne 20-4s-2w (pb 1729).... 15 2404
Creek County—
Viersen, Replogle 2, ne sw ne 24-14n-10e ..... * 2673
Shell, Orr "A" 2, nwc 32-15n-7e.. * 3599
Thomas et al, Charbonett 2, c se se 36-18n-9e ..... * 3150
J. L. Reynolds, Johnson 1, sw nw sw se 33-18n-11e (pb 1603) 15 1606
Jefferson County—
King Oil Co. et al, Pealor 1, c e½ ne nw 33-7s-6w ..... * 4623
Kiowa County—
Argo, Ratliff 2, sw ne ne 19-7n-17w 528 973
Logan County—
Sunray et al, Donoghue 1, c nw se 7-17n-1w 2444 5445

United States Well Completions—*Continued*

Company, Well and Location	Init. Prod. Bbls.	Depth
Marshall County—		
Pure, Metz (105) 2, ne sw nw 28-5s-7e	265	5091
Thomas (102) 2, nec nw 28-5s-7e	1938	5077
Muskogee County—		
Tierney, Drew 4, c sw ne 17-13n-16e	7	2088
J. R. Parks, McHilderbrand 1, se ne sw 17-14n-19e	*	719
Okfuskee County—		
Doak & Hughes, Lowe 3, sw se ne 16-10n-11e	125	2862
Skelly, Wesley 1, swc nw 21-11n-9e	393	4047
Oklahoma County—		
Zebb, Highland 1, nw sw se 26-12n-3w	*	6510
Okmulgee County—		
Oklahoma Oil Corp. et al, Hall 1, nw nw ne sw 12-12n-12e	*	3116
Payne County—		
Texas, Graham 3, c w½ ne se 11-17n-1e (pb 4774)	414	4939
Pontotoc County—		
Huddleston, Bently 1, sw sec 28-5s-8e	*	895
Seminole County—		
Weldon Hall, McKinzie 1, sec ne 14-7n-7e	*	3348
Mid-Continent, Ferguson 2, ne nw nw 19-7n-8e (pb 1536)	335	3491
Magnolia, Lena 7, nwc sw 32-8n-8e	60	1930
Dunnett, Duncan 2, se nw ne 33-9n-6e	*	2826
Tillman County—		
I. T. I. O. Co., Dickey 7, sw nw nw 1-3s-19w	2544	5081
Wagoner County—		
James Pet. Co., Robson 2, ne nw ne nw 22-19n-15e	¶6.36	907
OLD WELLS DEEPENED		
Grady County—		
Magnolia, Harrison 4, ne se ne ne 28-3n-5w (otd 2510)	40	2545
Pottawatomie County—		
Vivian et al, Atchley 2, se nw ne 1-6n-4e (otd 4191)	40	4254
Denver P. & R. Co., Zoeller "A" 2, nw ne se 5-6n-5e (otd 4237) (pb 4220)	35	4425
Seminole County—		
I. T. I. O. Co., Livingston 5, nec nw 15-8n-6e (otd 4010) (pb 3330)	7	4477

Pennsylvania

BRADFORD DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Bradford Tr. Co., 18 wells	18	....
Forest Pet. Corp., 2 wells	2	....
Niagara Oil Corp., 3 wells	3	....
MIDDLE DISTRICT		
Fryburg Motor Co., Davis	1	....
W. H. Masters, Mimm	1	....
SOUTHWEST DISTRICT		
Fayette County—		
Duquesne Nat. Gas, Spok 1	¶0.27	2303
Greene County—		
Peoples, Hoffmann 1	¶0.05	3275
Jefferson County—		
T. W. Phillips, Smith 1	¶0.09	3193
Westmoreland County—		
Peoples Nat. Gas, McCreary 2	¶0.38	2177
WATER INTAKE WELLS		
Bradford District—		
Penn Valley Crude Oil Corp., Fee 2	..	....
Forest Oil Corp.	..	....
Forest Pet. Corp., 2 wells	..	....
D. Y. M. Corp.	..	....

West Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Andrews County (Emma)—		
Cooke & Farris, University-Ohio 1	1212	4320
Crane County (Wildcat)—		
Gulf, Waddell et al 17	1242	5648
Crane County (Gulf-Waddell)—		
Gulf, Waddell 39	384	3510
Crane County (Sand Hills)—		
Humble, Tubb 4-C	1376	4400
Ector County (Goldsmith)—		
Gulf, Goldsmith 342	1252	4252
Goldsmith 344	1419	4255
Goldsmith 346	3275	4223
Ector County (North Cowden)—		
Cities Service, Rhodes 15	2087	4160
Gaines County (Seminole)—		
Amerada, Glen Crain 3	436	5360
Robertson 3	490	5265
Magnolia-Atlantic, H. & J. 10-195	400	5261
H. & J. 8-217	541	5340
Osage Dr. Co., Willard-Humble 1-a	83	5340
Hockley County (Slaughter)—		
Delta Dr. Co., Slaughter 3-A	598	4973
Slaughter 2-B	638	5035
Honolulu Oil Corp., Frazier 3	2231	5018
Slaughter 10-B-24	1537	5000
Mid-Continent Pet. Corp., Mallet 1-B	665	5032
Skelly Oil, Lincoln 1	929	5005
Western States Gaso. Corp., Frazier 8	2415	5011
Mitchell County (Northwest)—		
Judith Quinette Oil Co., Strain 1	196	1741
Art Wagner et al, Fuller-Conoco 2	284	1756
Pecos County (Wildcat)—		
Culbertson & Irwin, Inc., Heiner 1 (pb to 5509 ft)	36	5665
Pecos County (Abell)—		
Magnolia, Sharp-State 1 (new pay)	92	5945
Pecos County (Taylor-Link)—		
Landreth Prod. Corp., University-Humble 2-J	160	1747
Pecos County (Tobarg)—		
Cardinal Oil Co., Tippett-Kirby 62-E	9	482
Pecos County (Walker)—		
Shasta Oil Co., White-Baker 3	144	1948
Scurry County (Sharon)—		
Coffield & Guthrie, Moore 4	155	1872
Ward County—		
Gulf, O'Brien 163	977	2797
O'Brien 165	1237	2779
Magnolia, Sealy 7-41	*	3113
Winkler County (Keystone)—		
J. R. Sharp et al, Jenkins-Gulf 4	381	3378
Yoakum County (Wasson)—		
Aloco Oil Co., Randall-Texaco 4	238	5267
Argo Oil Corp., Comer 9-A	833	5230
Continental, Stevens 7-A	723	5040
Dan Danvers et al, Willard 13	381	5260
Willard 16	144	5280
Willard 2-B	1374	5293
Humble, Bennett 16	590	5280

Texas Gulf Coast

Company, Well and Location	Init. Prod. Bbls.	Depth
Brazoria County (West Columbia)—		
S. W. Richardson, Holmes 1	411	6160
Smith Salvage Co., Masterson 3	472	2292
Harris County (Wildcat)—		
Sun Oil, Foster Lbr. Co. 1	*	8503
Liberty County (Wildcat)—		
George H. Echols et al, Boyt 2	*	8756
Wharton County (Withers)—		
Texas Co., Pierce Est. B-71	68	5542
Pierce Est. C-92	116	5379

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United States Well Completions—*Continued*

East Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Joiner Area—		
W. W. Hinchliffe et al, Pinkston 4 (4.1-ac)	720	3630
Kilgore Area—		
Joe Holcomb et al, Clayton 4-B (2.79-ac)	2500	3553
Salmon Oil Co., Smith 4-A (10-ac)	3000	3570
Shell, Bates 25 (64.96-ac)	2400	3612
Willoughby 28 (57.7-ac)	2000	3611
Longview Area—		
General Crude Oil Co., Rembert 15 (89¼-ac)	1500	3499
Magnolia, Saulter 12 (55-ac)	3000	3627
Margay Oil Corp., Victory 15 (87-ac)	1800	3594
Mudge Oil Co., Free 21-A (104.7-ac)	3600	3720
Anderson County (Long Lake)—		
Long Lake Prod. Co., I&GN Ry. 9	181	5379
Falls County (Wildcat)—		
Jay Carruth et al, Westbrook 1	•	730
Franklin County (Talco)—		
B. G. Byars et al, Rutherford-Sun 3	744	4286
Freestone County (Wortham)—		
Barney Carter et al, Simmons 1-A	60	2974
Summers 1	65	2954
Marion County (Pine Island)—		
Sloan Wells, Burr 2, M. G. Nall sur.	312	2384
Roosth & Genecov, Freeman 1, W. N. Burton sur	•	2345
McLennan County (Wildcats)—		
E. P. Campbell et al, Stewart 1	•	765
Frank Place et al, Hackney 1	•	1170
Navarro County (Richland)—		
C. L. Brown et al, Davis 1	15	3336
Smith County (Chapel Hill)—		
Delta Dr. Co., S. Walton-Shell 1, (gas-dist.)	¶7.9 &	480 5865
Wood County (Wildcat)—		
F. R. Jackson-W. C. McGlothlin, Moore 1	•	5652
Wood County (Hawkins)—		
Bracken Oil Co., McClenny 1	509	4824
General Am. Oil Co., Kay 1-A, Lot 18	427	4868
Texas-Jersey Oil Corp., McClenny 1 (82/100-ac)	454	4912

Texas Panhandle

Company, Well and Location	Init. Prod. Bbls.	Depth
Gray County—		
W. D. Kelly et al, Hood 1	287	3069
King Oil Co., South Vollmert 9	216	3267
Magnolia, Fee (Tr. 227) 43	118	2891
Phillips Pet. Co., Benton 5	†	3269
McKinney 6	77	3288
Warner Oil Co., Morse 4	23	2903
Hutchinson County—		
Benonine Oil Co., Starnes 9	231	3198
J. E. Crosbie, Inc., Pitts 39	253	2810
J. M. Huber Corp., Weatherly 13	776	3020
Bob Murphy et al, Mathis 2	288	2990
Phillips Pet., Cockrell 51	190	3066
Shell, Harvey Sisters 9	202	3040
Skelly Oil, Watkins 13-B	85	2760
Wheeler County—		
E. B. Clark et al, Sloss 1	•	2181
Sloss 2	330	2088
C. N. Ochiltree et al, Morgan 1	•	2120

West Central Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Callahan County (Wildcat)—		
Ungren-Frazier et al, Burks-Rushing 1	31	1094
Comanche County—		
R. F. St. John & Choate, Smith 11	12	635
Eastland County—		
Danciger O&R, Inc., Abbott 1 (pb to 3301 ft)	258	3587
Hickok P&D Co., Gray-Luse 1	¶4.0	3693
Erath County (Wildcat)—		
E. H. Young et al, Mills 1	•	212
Jones County—		
Humble, Horton 2	•	2999
Thos. D. Humphrey, Rust 2	•	2580
Shackelford County (Wildcats)—		
R. H. Roark et al, Elliott 1	•	890
Cecil Young et al, Simpson 2	•	791
Shackelford County—		
Charter O&G Co., Powers 2	•	1653
R. H. Roark et al, Snyder 1	•	754
Taylor County—		
Tall-Vez Oil Co., McGehee 1	¶6.6	2403

North Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County (Wildcat)—		
W. T. Hutchinson, Jr. et al, McCrory 1-B	•	1550
Archer County—		
Pet. Producers Co., King 3	132	1250
J. L. Webb et al, Montgomery 2	•	1121
Baylor County (Wildcat)—		
Rogers & Lanfair, Howe Bros. 1	•	3207
Clay County (Antelope)—		
Shell, Coburn 7	336	3275
Coburn 8	1002	3257
Clay County—		
Geo. Golden et al, 1st Texas Jt. Stock Bank 3	5	339
Gorman & Norwood, Taylor 3	25	1143
Sussex Oil Corp., McInness 3	40	1253
Cooke County (Wildcats)—		
Seitz-Comegys & Seitz, Mount 1-B	•	1867
Texas Co., Bindel 1	234	1896
Cooke County (Walnut Bend)—		
Sinclair Prairie, Cox 2-A (pb to 4732 ft)	242	4955
McGeorge 19 (pb to 4047 ft)	604	4944
Cooke County—		
C. J. Bohner et al, Linn 2	40	1119
Jack County—		
B. C. Gilmore et al, Hoefle 1	•	600
Three B Inv. Co., Helvey 1-A	648	3108
Montague County (Wildcat)—		
Tom Hunter-Wilcox O&G Co., Barcus-Conoco 1	•	4705
Montague County—		
Pure, Maddox 9-C	78	915
Montague County (Bonita)—		
Sinclair Prairie, Bonita Northeast Unit 1	•	6466
Throckmorton County (Wildcat)—		
Humble, McKnight 1	1238	4049
Wichita County—		
Coleman & Coppock, Warren 3	25	1500
C. O. Davis et al, Jones 9	6	622
F. A. Dickenson et al, Fee 16	10	1001
Gordon Rogers et al, Greever 1	•	1430
Wilbarger County (Fargo)—		
Amerada, Sears 1	497	3980
Wilbarger County (Consolidated)—		
J. A. Woods & Son, Womack 10 (new pay)	60	1788
Wilbarger County (Wildcats)—		
Walter Gant et al, Mock 1	•	6122
S. S. Kouri-W. B. Omohundro, Kelly 1	•	4011
Wilbarger County—		
W. B. Omohundro et al, Waggoner Est. 3	46	1119
Young County (Wildcat)—		
R. P. Dorian & Mitchell, Grigsby 1 (pb to 3987 ft)	416	4191
Young County—		
Ard & Hansen, Belknap Coal Co. 1-23	•	725
Burma Pet. Co., Dunagan 2	9	919
Craig & Wilson, Rushing 1	•	901
Carey & Carey, Vaughn 2	¶20.0 &	536 3914
Vaughn 3 (new pay)	466	2480
R. R. Kolp et al, Dailey 1	•	614
J. W. Sparks et al, Clark 9	35	907
Tex-Tor Oil Corp-J. McLester, Mosley 4	327	3825
E. D. Willis et al, Stewart 10-B	9	860
Stewart 11-B	•	820
P. B. Worthington et al, Hunt-McClatchey 1	•	1138
Rogers 3	26	900

OLD WELL DEEPENED

Company, Well and Location	Init. Prod. Bbls.	Depth
Young County—		
Coke Lupton & J. McLester, Gibson 5 (otd 3680 ft)	504	4074

Southwest Texas

CORPUS CHRISTI DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Bee County (Wildcat)—		
Pummill Oil Co., Wittman, Sr. 1, 69.8-ac lse, John Ryan sur, 3 mi se Beeville	•	3642
Brooks County (Kelsey)—		
Magnolia, State-Marshall 4	450	4740
Cameron County (Wildcat)—		
Pure Oil, Newberry 4, Skelton sur, 6 mi sw Point Isabel	•	11,266
Jackson County (Lolita)—		
Humble, Mitchell 2	750	5282
Magnolia, Mitchell 14	825	5296
Skelly, Ward 4	800	5295
Jackson County (West Ranch)—		
Forest Dev. Corp, Dixon 3	500	5766
Magnolia, West 133-A	375	5106
West 134-A	300	5756
West 139-A	275	5765
Live Oak County (White Creek)—		
P. H. Korges, Adams 2	242	1544
Nueces County (Agua Dulce)—		
Ginther, Warren & Ginther, Sands & Eggert 1, fld outpost.	¶100.0 &	250 7502
Shasta, Blucher 1, fld outpost	•	7607
Nueces County (Bentonville-King)—		
Southern Minerals, Walker 7	550	5647
Nueces County (Stratton)—		
Bay-Tex, Union Central 7	500	6765
Conroe Dr. Co., Sellers 5-B	•	6890
Southern Minerals, Stratton-Community 13	550	6740
Refugio County (Tomoconnor)—		
Quintana, Claude Heard 18	975	5925
San Patricio County (Midway)—		
W. Stewart Boyle, Hutto 1, owwo, orig abnd by Blaffer & Owen, taken over by new operator	¶10.0 &	150 5423
S.E.W. Oil Corp, Morris 1, 3000 ft w prod	•	6510
Victoria County (Coletto Creek)—		
Averill & Cox, Terrell 2	225	2909
Victoria County (Heyser)—		
Gulf, Traylor 49-B	¶25.0	5488
Victoria County (Victoria)—		
W. Stewart Boyle, Fox 1, 3400 ft w fld, owwo, orig abnd by Sewell & Smith, taken over by new operator	375	5250

LAREDO DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Duval County (Bridwell)—		
Forest, Rogers 3	150	4305
Duval County (Charamousca)—		
Magnolia, Duval Co. Rch. Co. 6(288)	35	1532
Duval County (Driscoll)—		
Continental, Driscoll 63-A	675	3409
Duval County (Hoffman)—		
Duval Oil Corp., Hoffman 14	¶10.0	2880
Magnolia, Weil 22(113)	¶7.0	2636
Duval County (North Sweden)—		
Hiawatha, Parr 30, extends prod 2000 ft e	¶5.0 &	16 5995
Duval County (Seven Sisters)—		
Wellington Oil Co., Welder 5-G	340	2534
Jim Hogg County (Wildcat)—		
Achning & Daubert, Garza 1, blk 7, S.F.A. Mfg. & Irr. Co. sur 145, 3 mi nw Colorado fld	•	3115
Forest Dev. Corp., Ramirez 1, sh 3, I&GN sur 271, 118.8-ac lse, 2 mi w Colorado fld	¶7.0	3006
Sun Oil Co., McCampbell 1, 801.7-ac lse, Las Vivoritas & S. A. Baluarte grs.	•	5604
Starr County (Rincon)—		
Transwestern & Alvin C. Hope, Cameron 1	•	5000
Webb County (Killam)—		
O. W. Killam, Garcia 7	60	2031
Garcia 8	48	2030
Webb County (Glen)—		
Transwestern, Yaeger-Strohman 9	91	2181
Yaeger-Strohman 10	414	2194
Webb County (Wildcat)—		
Buffalo, Ward 1, J. V. Barrego gr, 3 mi w Glen fld	•	2011
Zapata County (Lopena)—		
Venture, Ramirez 1-B	†	263

SAN ANTONIO DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Caldwell County (Bee Creek)—		
Ralph R. Ogden ,Miears 9-A	810	2135
Caldwell County (Wildcat)—		
Wilcox, Walker 1, 150-ac tr, Smeed sur, 5 mi e Salt Flats fld	•	3636
Guadalupe County (Wildcats)—		
R. T. Newton, Bertha Vorphal 1, 80-ac lse, out of 400-ac tr, John Christopher sur, 1½ mi s Elm Creek fld	•	1025
J. A. Forrester, Thomas Dix 1, 580-ac tr, R. M. Forbes sur 48, 6 mi se Seguin	•	2365

West Virginia

Company, Well and Location	Init. Prod. Bbls.	Depth
Clay County—		
Thompson Gas, Thompson Coal Land 51-T	¶0.23	1014
Kanawha County—		
Godfrey L. Cabot, Putnam 16	¶1.9	5144
Pleasants County—		
Maxton O. & G. Co., First Nat. Bank 2	¶0.1	1936
Ritchie County—		
Albert Britton, Hardman 1	•	1812
Roane County—		
L. L. Reed et al, Hughes 4	25	1815

Wyoming

Company, Well and Location	Init. Prod. Bbls.	Depth
Park County (Oregon Basin)—		
Enalpac Oil Co., Cactus 1, OPC-3, c sw se se 5-51n-110w	600	3338

•Failures; †Junked; ¶Million cu. ft. gas.

Committee Reports Favorably On Public Lands Probe

The Senate Public Lands Committee on April 2 ordered a favorable report on a resolution sponsored by Senator Joseph C. O'Mahoney for a Congressional investigation with respect to the development of mineral resources, including oil and gas, of the public lands.

O'Mahoney declared that the investigation would develop information regarding the possibilities of the public lands which might be of inestimable value to the national defense program.

The senator has consistently been interested in the development of Wyoming resources, particularly of oil, and has frequently criticized the oil industry for failing to maintain large refinery activities in his state.

WILDCAT REPORT
New Starts and Completions

ALABAMA
FIRST REPORT

Wilcox County—Reid Clark et al's McWilliams 1, nec nw sw 9-11n-10w, rig.

ARKANSAS
FIRST REPORTS

Columbia County—McAlester Fuel Co.'s Franks 1, c se se 16-18-21, mat.

Union County—Crescent Dr. Co.'s Burns 1, c ne sw 13-18-17, rig.

COMPLETIONS

Columbia County — Turner, O'Farrell & Crow's Green 1, c nw se 11-15-20, abnd 3487 ft in Travis Peak.

Miller County—Louark Prod. Co.'s Hedrick 1, c ne se 27-19-27, elev 296 ft, Young (Rodessa) 6304 ft, abnd 6505 ft.

Sevier County—Gramp Oil Co.'s Phillips 2, c sw sw 26-9n-30w, abnd 1043 ft.

CALIFORNIA
FIRST REPORTS

Ventura County—Palma Oil Co.'s No. 1, sec 8-3-19, lcn, Bardsdale area. Oil Prod. Maintenance, Inc.'s Byhara 1, sec 12-4-22, lcn, Ojai area. Crude Oils, Inc.'s West 1, sec 19-4-20, lcn, Timber Canyon area.

COMPLETION

Humboldt County—B. M. Daly's No. 1; sec 2-1-2, td 900 ft, no casing, abnd, Northern California area.

KANSAS
FIRST REPORTS

Greenwood County—Brazil et al's Hillard 1, nec nw 27-27-11e, lcn.

McPherson County—Rocket Dr. Co. et al's Miller 1, c w½ sw se 12-17-1w, dr.

Trego County—McKnab et al's Krysi 1, c n½ nw ne 1-12-22w, dr.

Woodson County—Phillips Pet. Co.'s Wix 1, se ne se 31-25-15e, dr.

COMPLETIONS

Barton County—Republic Nat. Gas Co.'s Radenberg 1, c w½ nw se 8-17-11w, 2 mi w Kraft pool, new pool, top Topeka 2700 ft. Lansing 3064 ft, Sooy 3311 ft, Arbuckle 3318 ft, td 3332 ft, 1670 gal acid, pump 68 bbls 39.5-gr.

Ellsworth County—Pryor & Lockhart et al's Weisenthal 1, sw se ne 30-15-10w, 3 mi nw Stoltenberg pool, Florence 1575 ft, Neva 1820 ft, Howard 2430 ft, Lansing 2900 ft, Sooy 3220 ft, sd 3237-50 ft, reworked Arbuckle 3275 ft, Arbuckle 3312 ft, hfw 3321 ft, abnd 3325 ft.

Rice County—Earl F. Wakefield et al's Smyres 1, c n½ ne se 35-19-6w, 2½ mi n Bornholdt pool, Topeka 2230 ft, Lansing 2734 ft, Mississippi 3259½ ft, abnd 3348 ft.

Rooks County—Ruso Dr. Co. et al's Dick 1, c w½ nw sw 21-10-19w, 2 mi nw Zurich pool, Anhydrite 1570 ft, Ft. Riley 2315 ft, Topeka 3169 ft, Lansing 3431 ft, Sooy 3702 ft, Simpson 3782 ft, Arbuckle 3823 ft, abnd 3827 ft.

NORTH LOUISIANA
FIRST REPORT

Winn Parish—Nat Wissman's Quinn 1, se se 23-9n-6w, sp.

SOUTH LOUISIANA
FIRST REPORTS

Rapides Parish—Navarro's Cooper 1, West Alexandria area, sec 54-4n-2e, ml.

St. Mary Parish—Baldwin Minerals' Adeline Sugars Co. 1, shallow test sw of Charenton, sec 55-14s-9e, lcn.

MICHIGAN
FIRST REPORTS

Allegan County—F. W. Kenlet's Moore 1, nw ne se 12-2n-14w, rig.

Genesee County—Lewis Burr's Burlson 1, nw se ne 27-7n-5e, rig.

Clare County—Gulf's Frackelton 1, c ne se 20-18n-5w, lcn. Glenn Mill's Consumers 2, 5-20n-5w, lcn.

Huron County—Wallace Markle's Zelba 1, 34-17n-15e, lcn.

Gratiot County—Chartiers Oil Co.'s Grubaug 1, sw sw se 6-11n-3w, dr.

Isabella County—Belvidere Oil Co.'s Pease 1, se se nw 21-13n-5w, mim.

COMPLETIONS

Allegan County—Guy Wray's Tucker 1, se sw nw 33-2n-16w, Traverse 1231 ft, abnd 1256 ft.

Barry County—Wolverine Nat. Gas Corp.'s Dickerson 1, ne ne ne 4-1n-9w, Traverse 1800 ft, abnd 1885 ft.

Kalamazoo County—W. S. Cook's Mott 1, sw sw sw 2-1s-12w, Traverse 1401 ft, abnd 1405 ft.

MISSISSIPPI
FIRST REPORT

Leake County—R. W. Williams et al's Allen 1, nw se 26-12n-7e, mat, Rex Dr. Co., cont.

NEBRASKA
FIRST REPORTS

Nemaha County—Phillips Pet. Co.'s Neil 1, c sw ne 24-4n-14e, dr.

Richardson County—I. T. I. O. Co.'s Bankers Life 1, c ne se 3-2n-15e, otd 2476 ft, to deepen. Johnson & Mitchell et al's Eickhott 1-A, c nw nw 4-2n-16e, mim.

NEW MEXICO
COMPLETION

Eddy County—Mac T. Anderson et al's Brainard 1, se ne ne 26-18s-27e, elev 3432 ft, abnd 2831 ft.

OKLAHOMA
FIRST REPORTS

Cleveland County—W. A. Delaney et al's Montgomery 1, se nw ne 13-7n-2w, dr. Luther Mayes et al's McCommins 1, nw ne ne 15-10n-1e, mirt.

Coal County—Ramsey Pet. Corp.'s Harryman 1, c w½ se nw 27-2n-9e, dr.

Comanche County—Bruce Runion et al's Whitehead 1, c e½ w½ ne 3-1s-13w, dr.

Cotton County—South Port Oil Co.'s Harris 1, c nw ne 26-2s-13w, dk.

Garvin County—Stanolind, Guy Hannum et

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Hughes County—Arrow Dr. Co. et al's Grannerman 1, sw nw se 23-9n-11e, dr.

Jefferson County—Jack Johnson et al's Bound 2, nec sw 13-6s-6w, dr.

Okmulgee County—Vierson O. & G. Co. et al's Tilt 1, sec 4-15n-12e, lcn.

Payne County—Gardner Pet. Co. et al's Johnson 2, c n½ se sw 12-19n-1w, dr.

COMPLETIONS

Creek County—Roy Starr O. & G. Co.'s Lumm 1-A, se nw se 8-14n-8e, 2 mi w Deep Fork pool, new pool, Belle City 910 ft, Hogshooter 1315 ft, Layton 1400 ft, Big lime 2358 ft, Oswego 2413 ft, Prue 2418 ft, Pink lime 2780 ft, Bartlesville 2844 ft, td 2851 ft, pb 2480 ft, perf Prue sd 2464-70 and 2420-45 ft, 6,000,000 ft gas, rock pressure 615 lbs.

Okfuskee County—Bryan Pet. Co.'s Wisey 1, ne se se 5-11n-8e, 2½ mi w Dill pool, Checkerboard 1265 ft, Wewoka lime 1730 ft, Calvin 2160 ft, Senora sd 2512-21 ft, Inola lime 3090 ft, Booch 3397 ft, Cromwell zone 3645 ft, Cromwell sd 3648 ft, electric log to 3697 ft, abnd 3702 ft in Cromwell.

Oklahoma County—Clyde Dorr et al's Riley 1, nec se 34-13n-1e, 2 mi s Jones pool, Pawhuska 2175 ft, Belle City 3610 ft, Hogshooter 4080 ft, Layton 4125 ft, Checkerboard 4420 ft, Cleveland sd zone 4440-90 ft, Oswego 4980 ft, Prue 5055 ft, Woodford 5445 ft, Hunton 5535 ft, Sylvan 5610 ft, Viola 5710 ft, Simpson 5740 ft, Dolomite 5785 ft, sandy Dolomite 5797 ft, first Wilcox 5820-70 ft, Marshall zone 5845 ft, second Wilcox 5900 ft, abnd 5921 ft.

Noble County—Adams et al's Albright 1, swc se 31-23n-2w, 2½ mi sw Billings pool, abnd 1300 ft.

Stephens County—Gulf's Krieger 1, c e½ ne sw 3-2n-5w, deep test south Knox pool, Hoxbar 2900 ft, dip 45 degrees 5780 ft, top Deese 3540 ft, Dornich Hill 5960 ft, abnd 6271 ft in shale.

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WEST TEXAS

COMPLETIONS

Crane County—Gulf's Waddell et al 17, c e¼ of e½ H&TC sec 15, blk 3, elec 2463 ft, new Ordovician pool, Yates 1297 ft, base Permian and top detrital 5538 ft, Ellenberger 5584 ft, cased off big gas, used 5000 gals acid 5635-48 ft, 1242 bbls 37½-gr oil, with gas/oil ratio 2185/1, initial.

Pecos County—Culbertson & Irwin, Inc.'s Heiner 1, c ne ne GC&SF sec 589, new Ordovician pool, elev 2549 ft, Yates 930 ft, base Permian and top detrital 5110 ft, Ellenberger 5128 ft, used acid in broken pay 5382-5509 ft, plugged back from 5665 ft, flowed 36 bbls 35.8-gr oil via 6 flow valves, with gas/oil ratio 3771/1. Magnolia's Sharp-State 1, sec lot 9 and H&GN sec 22, blk 9, elev 2395 ft, deeper Ordovician pay Abell pool, Simpson 5468 ft, Tulip Creek 5170 ft, Simpson sand 5915-45 ft, pump 92 bbls 38.6-gr initial.

WEST CENTRAL TEXAS

FIRST REPORTS

Callahan County—H. R. Clay & Fred Hyer's Hennessey 1, nec sw BBB&C sec 83, lcn.

Mills County—C. D. Lane et al's Egger 1, sec 4, Wm. Hayes sur, sp.

Parker County—J. L. Higginbotham et al's Wheeler 1, se cor 160-ac tr & J. B. Brannon sur, lcn 5000-ft test.

Somervell County — Plymouth Oil Co.'s Cousins 1, east cor 50-ac tr, John Echols sur, 2 mi s Glen Rose, rur for 7500-ft test.

COMPLETIONS

Callahan County—Ungren-Frazier et al's Burks-Rushing 1, swc BBB&C sec 116, new pool, pump 31 bbls oil and 16 bbls water initial, sand 1089-94 ft.

Erath County—E. H. Young et al's Mills 1, J. Harvey sur, abnd 212 ft.

Shackelford County—R. H. Roark et al's Elliott 1, ne se L.A.L. sec 12, abnd 890 ft. Cecil Young et al's Simpson 2, se ne sw B.A.L. sec 13, abnd 791 ft.

EAST TEXAS

FIRST REPORTS

Anderson County—J. A. Huddleston & U. W. Prater's Pfaff 1, R. Allen sur, 7 mi nw Palestine, dr 1010 ft.

Falls County—Kelsey & Miller's Reed 1, sw part 67-ac tr, A. de la Serda sur, 3 mi ne Marlin, dk.

Navarro County—W. L. Barrett et al's Mahaley 1, ne part 162½-ac tr, T. J. Chambers sur, 2 mi ne Rice, dr 880 ft.

Upshur County—L. S. White & O. S. Strickland's Gorman 1, nwc tr and S. G. Slayton sur, mile sw Big Sandy, dk.

COMPLETIONS

Falls County—Jay Carruth et al's Westbrook 1, blk 78, Manchaca sur, 3½ mi ne Chilton, elev 362 ft, Austin chalk 554-716 ft, abnd 730 ft.

McLennan County—E. P. Campbell et al's Stewart 1, sw part tr, S. Bruton sur, abnd 765 ft. Frank Place et al's Hackney 1, nw part I. Robbins sur, Georgetown 100 ft, Lower Trinity 1105 ft, abnd 1170 ft.

Wood County—F. R. Jackson & W. C. McGlothlin's Moore 1, center 10-ac tr, Joe Knight sur, ne edge Crow, elev 361 ft, Pecan chalk 3124 ft, no Austin chalk, Woodbine series 5012, red beds 5247 ft, 1st water 5552 ft, abnd 5652 ft.

SOUTHWEST TEXAS

FIRST REPORTS

Colorado County—W. R. Davis, Inc.'s Brownson 1-B, 424-ac lse A. B. Fisk sur, 2750 ft e ne Brownson 1-A, disc well Garwood fld, 9600-ft test, mir, Morris-Hamilton Dr. Co., cont.

Bee County—Hewit, Dougherty & Ogden's Wiess 1, 6438-ac lse, Jose Maria Uranga gr, 4 mi e Tuleta, 8300-ft Wilcox test, Hewit & Dougherty rig, mi.

Gonzales County—Austin Brown & Bob Stothart's Voight Est 1, s 62½ ac of ne 125 ac of 492.8-ac tr, Thos. DeCrew sur, 10 mi se Luling, 4250-ft test, lcn.

Duval County—Sun's Black 1-B, Pedro de la Zerda sur, 3 mi ne Fitzsimmons fld, 4600-ft test, co rig, mo.

Jackson County—Humble's Robbins 2, blk 9, B. J. White lge, ab 81, 2/3 mi ne Mauritz 2-B, 6500-ft test, co rig, lcn.

Jim Hogg County—W. G. French's Garcia 1, blk 11, sur 269, 40-ac lse, 8 mi sw Randado, 3500-ft test, lcn. Sun's Montalvo 1, 1683-ac lse, Los Vivoritas, 8.6 mi s Hebbronville, co rig, ru.

Jim Wells County—Arkansas Fuel Oil Co.'s Brieger 1, 80-ac lse, blk 50, A. J. Zander Farm lots subd, 1½ mi w Orange Grove townsite, 6000-ft test, Henshaw Bros., cont, ru. Rowan & Hope, Inc.'s Kynette 1, e 200 ac, sh 4, La Trinidad gr, 1½ mi se Ben Bolt, 5500-ft test, co rig, lcn.

Live Oak County — Henderson Coquat's Reagen 1, 844.28-ac tr, Louis Romaro sur, ab 395, 9000-ft Wilcox test, Coquat rig, wor. Kilgore Developers, Inc.'s Killmer Est 1, blk 9, Nueces Co. Schl. Ld. sur, ab 1021, 80-ac lse, 3 mi s La Garto, 5300-ft test, co rig, wor.

Nueces County—R. H. Hawn's Bush Wofford et al 1, e½ of w½ sec 205, F. Z. Bishop Palo Alto subd, 160-ac lse, 1 mi n Stratton fld on e flank oil prodn, lcn. Taft Oil Co.'s Walter 1, n 118 ac of frac sec 81, Geo. H. Paul's subd, Robt. Driscoll ranch, 1¼ mi s Ginther & Warren & Ginther's Sands & Eggert 1, 7500-ft test, sp.

Webb County—Buffalo Oil Co.'s Ward 1, J. V. Borrego gr, 3 mi w Glen fld, 2000-ft test, abnd 2011 ft.

Zapata County—Dulup Oil Co.'s Haynes 3, sw½, sec 28, Alice D. Haynes subd of Villa gr,on 320-ac lse, 15 mi s Escobas, 1200-ft test, lcn. Forest Dev. Corp.'s Buck 1, blk 2, J. C. Sheffield subd, on 160-ac lse, sur 273, 7 mi s Randado, mi. J. P. (Mike) Martin's Serapio Vela 2, blk 75, sh 2, El Gurllo gr 1500-ft test, Martin rig, lcn.

COMPLETIONS

Bee County—Pummill Oil Co.'s Wittman 1, 69.8-ac lse, John Ryan sur, ab 63, 3 mi se Beeville, abnd 3647 ft.

Bexar County—Dr. L. L. Skaggs' Gurinsky 1, 35.9-ac tr, Morales sur, 7 mi sw San Antonio, lcn abnd.

Caldwell County—H. F. Wilcox O&G Co.'s Walker 1, 150-ac tr, Smeed sur, 5 mi e Salt Flats, Edwards 3586 ft, abnd 3636 ft.

Cameron County—Pure Oil's Newberry 4, Skelton sur, 6 mi sw Point Isabel, abnd 11,266.

Duval County—Hiawatha O&G Co.'s Parr 30, 3920-ac lse, San Andres gr, 5,000,000 ft gas per day, ⅜-in ch, 1875 lbs tp, 1950 lbs cp, perf 5588-94 ft, td 5995, extends North Sweden prod 2000 ft.

Guadalupe County—J. A. Forrester's Dix 1, 580-ac tr, R. M. Forbes sur 48, 6 mi se Seguin, abnd 2365 ft. R. T. Newton's Vorphal 1, 80-ac lse, 400-ac tr, John Christopher sur, 1½ mi s Elm Creek fld, abnd 1025 ft.

Jim Hogg County—Achning & Daubert's Garza 1, blk 7, S.F.A. Mfg & Irr. Co. sur 145, 3 mi nw Colorado fld, abnd 3115 ft. Forest Dev. Corp.'s Ramirez 1, sh 3, I&GN sur 271, 2 mi w Colorado fld, gas well, td 3006 ft. Sun's McCampbell 1, 801.7-ac lse, Las Vivoritas & S. A. Baluarte grs, abnd 5604 ft.

Nueces County—Ginther, Warren & Ginther's Sands & Eggert 1, sec 83, Paul's subd, Driscoll Rnch, 75,000,000 ft gas per day, open flow, 3/32-in ch, tp 2640 lbs, fluid volume 1¾ gal to 1000 ft, td 7502 ft. Shasta Oil Co.'s Blucher 1, 1248.8-ac tr, e Agua Dulce fld, abnd 7607 ft.

San Patricio County—S.E.W. Oil Corp.'s Morris 1, sec 71, Coleman-Fulton Pasture Co. lands, 3000 ft w Midway prod, abnd 6510 ft.

Starr County—Transwestern & Alvin C. Hope's Cameron 1, s½ nw¼, Geo. W. Smith sur 228, n of Rincon fld, abnd 5000 ft.

Webb County—Buffalo Oil Co.'s Ward 1, J. V. Borrego gr, 3 mi w Glen fld, abnd 2011 ft.

NORTH TEXAS

FIRST REPORTS

Archer County—C. W. Gilliland et al's Symank-Lemmon 1-A, sw part blk 11, Meade Pasture subdiv, lcn.

Jack County—Alma Oil Co.'s W. J. Dees 1, Geo. Taylor sur, lcn.

Young County—L. V. Hull & Son's Young 1, nec s½ of TE&L sec 1496, lcn.

COMPLETIONS

Archer County—W. T. Hutchinson Jr.'s Wilson-McCrory 1-B, near nwc ne¼ Wm. Walker sur. A-660, Gunsight lime 1481-83, abnd 1550 ft.

Baylor County—Jim Rogers & B. M. Lanfair's Howe 1, swc John Howe sur A-572, abnd 3207 ft.

Cooke County—Texas Co.'s Bindel 1, lot 1, F. Hughes sur A-439, new pool, Strawn sand 1885-96 ft, pumped 234 bbls initial. Seitz-Comegys & Seitz, Inc.'s Mount 1-B, blk 9, S. P. Ry. sur, abnd in Ellenberger 1833-67 ft.

Montague County—Tom Hunter-Wilcox O&G Co.'s Barcus-Conoco 1, nec blk 78, Kaufman CSL sur, abnd 4705 ft.

Throckmorton County—Humble's McKnight 1, Day L&C Co. A-1264, 6 mi se Throckmorton, new pool, Bend 4021 ft, pay 4026-49 ft, used 5000 gals acid, flowed 645 bbls oil 12½ hrs ½-in ch.

Wilbarger County—J. A. Woods & Son's Womack 10, near swc nw sw H&TC sec 1, blk 7, new shallow pay Consolidated deep pool, sand 1778-88 ft, pumped 60 bbls initial. Walter Gant et al's Mock 1, H&TC sec 23, blk 11, abnd 6122 ft, S. S. Kouri-W. B. Omohundro's Kelly 1, swc H&TC sec 54, blk 13, abnd 4011 ft.

Young County—Carey & Carey's Vaughn 3, 96.6-ac tr, R. W. Nabors sur A-213, new shallow pay, sand 2474-80 ft, flowed 58 bbls 42-gr oil 3 hrs natural, ¼-in ch. R. P. Dorian & Mitchell's Grigsby 1, nwc TE&L sec 416, new pool, Bend 4054 ft, td 4191 ft and pb to acidize and nitro shoot broken pay 3074-86 ft, flowed 52 bbls 41-gr oil 3 hrs 20/64-in ch.

TEXAS GULF COAST

FIRST REPORTS

Jefferson County—Humble & Magnolia's Baird 1, B. F. Howard sur, 3 mi n Sabine Pass, bldg road for 7500-ft test.

Walker County—C. W. Markle's Davis1, 14 mi sw Huntsville, 461-ac tr Jas Lord sur, lcn for 2000-ft test.

Wharton County— S. W. Richardson's Jones 1, 3½ mi n of Louise, 303.5-ac tr, S. P. Middleton sur A-269, mim for 5500-ft test.

COMPLETIONS

Harris County—Sun's Foster Lbr. Co. 1, 4 mi nw Hufman, Turner sur, Cockfield 7316 ft, top Cook Mtn. 8434 ft, abnd 8503 ft.

Liberty County—George H. Echols et al's Boyt 2, Double Gum Bayou area, H&TC sur 9, 5½-in 8756 ft, perf sds 8570-80 and 8606-13 ft, so, wtr and gas, abnd 8756 ft.

MEN IN THE INDUSTRY'S NEWS

G. A. MABRY was appointed last week to assist H. C. Wiess, president of Humble Oil & Refining Company, Houston, in handling newspaper and press contacts, and at the same time, Richard J. Gonzalez was put in charge of correlating economic and statistical work for the company. Previously, these activities were under the supervision of W. N. Finnegan, Jr., who resigned several weeks ago to enter the oil industry for himself.

G. A. Mabry

Mabry has handled similar work for the sales department for a number of years, and is in charge of company publications which will continue under his supervision. He also is a member of the company's marketing committee. Mabry has been with the Humble organization for 17 years. His first work was in the refinery at Baytown. His desire to get into the sales department prompted him to take over management of a company service station at Baytown, and later this experience, plus knowledge gained from personnel training at the refinery community house, resulted in his promotion to Houston headquarters in 1930, where he took over a program of training for the sales department. In this work he started a tabloid publication for the sales force, and shortly afterward this was converted into the present monthly publication, the Humble Sales Lubricator.

R. J. Gonzalez

Gonzalez is a native of San Antonio, and before becoming connected with the Humble organization in 1937 was a member of the faculty of the University of Texas as assistant professor of economics.

RALPH S. COOLEY, for the past five years in charge of the West Texas-New Mexico district The Sloan & Zook Company, Bradford, Pennsylvania, has resigned to open an office in the First National Bank Building in Midland, Texas, for George P. Livermore, Inc. Cooley will devote most of his time to exploration activities.

HARRY J. SCHEIDT, graduate of Brooklyn Polytechnic Institute, has joined the engineering department of Northern Equipment Company. On completing a factory training course, he will be assigned to duty as a service engineer.

ERIC R. WOODWARD, formerly associated with Barrett Company, has joined the sales development department of The Mathieson Alkali Works, 60 East 42 Street, New York, where he is engaged in promotional work on new products. For several years, he has specialized in industrial sales work in both the heavy chemical industry and the petroleum industry, travelling extensively throughout the United States, Canada and Europe.

WALLACE E. PRATT, director and member of the executive committee of Standard Oil Company of New Jersey, gave a series of four lectures on petroleum geology before students and faculty of the departments of geology and petroleum engineering of the University of Kansas, March 17-19. Subjects of his lectures were "Oil in the Earth," "Where Oil Is," "Who Finds Oil—And How," and "Oil and Human Culture." Pratt is an alumnus of the University of Kansas.

M. C. MANDEVILLE, 51, president of Manson Oil Company, died March 28 of a heart attack at his residence in Chickasha, Oklahoma.

HAROLD M. McCLURE, Alma, chairman of the Michigan State Oil Advisory Board and two-term president of the Oil and Gas Association of Michigan, has been chosen legislative secretary of the association, succeeding A. J. Weideman, Mt. Pleasant, who resigned because of ill health. McClure served as association president during 1939 and 1940, and he and Weideman are credited as keynote men in final enactment of the first Michigan oil conservation law in 1939, along with Howard D. Atha, F. A. Calvert, Dr. R. A. Smith, George W. Myers and James C. Graves. McClure has been active in

Oil Personalities . . .

ED. A. LANDRETH

A DIVIDEND in the form of appreciation for efforts on behalf of the oil industry and his fellow citizens was tendered Ed. A. Landreth, president of Landreth Production Corporation, at the annual banquet of the Exchange Club of Fort Worth April 5, when he was honored as the outstanding citizen of Fort Worth during 1940. Prominent oil men in the Southwest added their praises, as Landreth has been a conservation leader and a tireless worker in promoting the activities of constructive oil groups.

His qualifications as Fort Worth's No. 1 citizen are predicated on years of participation in advancement of religious, charitable and educational activities. He is active in the First Methodist Church, and had a liberal share in establishment of the Methodist hospital. He served two years on the board of education, and is chairman of the executive committee of the Texas Christian University and a member of the advisory committee of the Southern Methodist University. Acting as co-chairman of the community chest, he accounted for about a third of the total contributions. He is vice president of the Fort Worth Council, Boy Scouts of America, and also aided in the establishment of the latter's summer camp. He is a member of the Fort Worth Club, River Crest Country Club and Fort Worth Boat Club.

Landreth spent his boyhood at Joplin, Mo., topping off his elementary education with a business course at a local college. His first full-time job was with an ice plant at Kansas City, advancing to operator of the power plant. Returning to Joplin in 1907, he joined the industrial machine company operated by his brother, the late William H. Landreth, and in four years became vice president and sales manager. Their activities were enlarged to include lead and zinc properties which thrived until the close of the World War.

A trip to Texas in 1919 to book refinery equipment orders from the plants springing up in the Ranger and Burkburnett fields proved a turning point in Landreth's career. Upon his return to Joplin he induced members of his family and friends to support him in launching an oil company with a capital stock of $50,000. He organized the Joplin Oil & Development Company, which met with prompt success in developing a prolific lease near Breckenridge, Texas. This adventure led to the organization of E. A. Landreth Company in June, 1920. The company netted $300,000 through oil sales from 8 wells in 4 months, then sold the 130-acre lease to Humble Oil & Refining Company for $250,000.

Fortified with ample working capital, Landreth moved into the nearby Ibex field, Shackelford County, and built up a property along with a natural gasoline plant that was sold for $2,500,000 to Phillips Petroleum Company. The latter also purchased Landreth's holdings in the Rock Crossing field, Wilbarger County, which were developed in 1925-27 for $3,500,000. Following this deal Landreth specialized in West Texas operations, resulting in the sale of his Church & Fields area properties in June, 1928, to The Texas Company for $6,500,000.

Landreth originally maintained Texas headquarters at Breckenridge, near the scene of his first oil strike. He moved his organization to Fort Worth in 1928.

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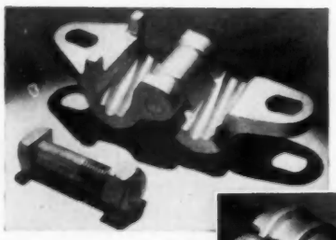


NO KINKING OF YOUR LINE WITH THIS CLAMP

The clamping surfaces in the BUCK CLAMP are scientifically formed to fit the lay of the wire, and positively prevent line kinking. It provides greater gripping area and higher clamping strength . . . with grooves, not wrinkles. It's safer and, with only one bolt, is much faster. It's your best clamp buy.

BUCK CLAMP COMPANY
3714 NAVIGATION BLVD., HOUSTON, TEXAS
Export: WKM Co., Inc., 74 Trinity Place, N.Y.C.
Sold Through Leading Supply Stores

MEN IN THE INDUSTRY'S NEWS

Louisiana oil men last week honored three men who helped rescue two Army fliers from the swamps near Lafitte. From left to right, are pictured John S. Hoffpauir, pumper for The Texas Company, who made two trips of more than a mile each through knee and hip deep muck to reach the fliers; Lieutenants Don Lang and Wilson Moore, who were rescued; Jeff Davis, oil editor for the New Orleans Item, who helped Hoffpauir, and J. L. Bailey, pilot of the rescue plane.

Michigan as contractor and producer since 1929.

A veteran Ohio, Kentucky and Michigan contractor and producer, Weideman came to Michigan in 1925 during the first Saginaw boom. He was named executive secretary of the association in October, 1937. Early in 1940, under a new set-up, the association divided executive work, with Weideman taking charge of legislative affairs and W. B. Pardoe, Grand Rapids, being named secretary in charge of membership, finances and statistical reports. Before his appointment as executive secretary of the association, Weideman served during the 1937-1938 term in the Michigan House of Representatives from the Isabella district, and during the National Recovery Administration oil-code era he served as umpire for the Michigan federal control board.

R. P. GREEN and W. R. Coleman have been elected vice president and secretary-treasurer, respectively, of Engineering Laboratories, Inc. Green, who retains his duties as chief engineer, has been associated with the company and its affiliate, Seismograph Service Corporation, for 10 years. Coleman, who is general manager of Engineering Laboratories, Inc., joined the company in 1935. He formerly was with Spartan Aircraft Company and Prairie Pipe Line Company.

R. P. Green

W. R. Coleman

DR. R. D. WYCKOFF, Gulf Research & Development Company, Pittsburgh, will discuss "Present Tendencies in Reservoir Studies" before the Gulf Coast Section of the American Institute of Mining & Metallurgical Engineers, meeting April 8 at the River Oaks Country Club, Houston.

J. C. CASLER has resigned as vice president and general manager of Joiner Oil Corporation, Dallas, to operate independently. He has opened an office at 1307 Kirby Building, Dallas.

JUDSON S. SWEARINGEN, department of chemical engineering at the University of Texas, last week discussed cycling processes before the East Texas Geological Society.

Unibolt
"FLEXI-BALL JOINT"

FOR LINES SUBJECT TO CONTRACTION AND EXPANSION

•

UTILIZES THE PROVEN UNIBOLT COUPLING PRINCIPLE

THORNHILL-CRAVER COMPANY
HOUSTON

UNIBOLT
THE ONE BOLT COUPLING

MEN IN THE INDUSTRY'S NEWS

E. C. BYNUM, manager of Atlas Supply Company's Overton, Texas, store has been appointed district manager for East Texas, succeeding E. B. Rainey, resigned. Bynum, who has been with the company 10 years, will have charge of stores at Gladewater, Kilgore and Overton. Ray Estes succeeds Bynum as manager of the Overton store, and will be assisted by J. H. McCrary. C. H. Collier has been made manager of the Kilgore store.

J. K. BEESON has been elected vice president in charge of sales for Pittsburgh Steel Company. He has been connected with the company since 1930 in a number of capacities, including assistant superintendent of the Monessen works, manager of manufacturers' product sales, assistant sales manager and assistant general manager of sales.

MISS LOUISE JORDAN, geologist for the Anzac Oil Corporation, Coleman, Texas, has resigned to join the Sun Oil Company's paleontological staff in the Dallas district office. She is also a linguist and spent several years in Turkey, teaching school and doing geological work for the Turkish government before moving to Texas.

E. B. THORNBURG, purchasing agent for Frick-Reid Supply Corporation, and R. D. Irwin, serviceman, left Tulsa last week for a tour of company stores in Illinois, Ohio and Pennsylvania. They also will call on a number of manufacturers.

JOHN R. SUMAN, vice president of Humble Oil & Refining Company and president of the American Institute of Mining and Metallurgical Engineers, and Chester Naramore, secretary of the petroleum division of the institute, this week will visit student A. I. M. E. chapters at Texas A. & M. College, Texas University and Texas Tech.

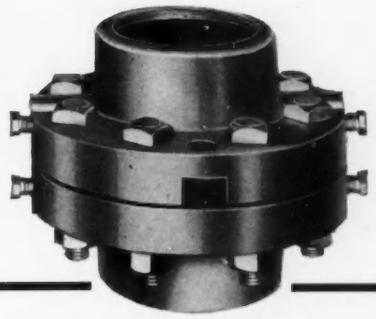
ANDY J. BALCOM, general superintendent of the telephone and telegraph department, Magnolia Pipe Line Company, Dallas, has been elected president of the Shrine Directors Association of North America.

ARTHUR ARDREY has been made general superintendent of the Robert W. Atha drilling organization, succeeding Ollie Irvin, new general manager of the Union Rotary Corporation.

FRANK L. CHASE, 76, retired vice president and general manager of Lone Star Gas Company and a pioneer in the distribution of natural gas in the Southwest, died April 1 on a train near Memphis, Tennessee, while en route to his Dallas residence from Florida. His death was attributed to stomach hemorrhage and complications arising from a broken hip sustained several days previous as a result of a fall. A native of Bucyrus, Ohio, he graduated from the Massachusetts Institute of Technology in 1890. His first employment was with the New York Central Railroad as a construction engineer. At the turn of the century, he entered the gas industry in the Miami Valley region of Ohio, and was supervising the operation of eight gas companies when given the opportunity in 1917 to take charge of the Lone Star Gas Company's expansion program in Texas. He retired from active service in June, 1939, but continued to maintain close contact with the affairs of the company. Chase was a leader in gas conservation, and rendered extensive services on behalf of the gas and allied associations of the nation.

ERNEST J. DOLEY has been re-elected president of Doley Oil Company.

Pictured attending the annual superintendents meeting of the Oklahoma-Kansas production division of The Texas Company, held recently in Tulsa, were, left to right, in the first row: C. C. Kelley, superintendent of gas and gasoline plants; M. L. Terry, chief engineer; J. E. Flanagan, head land department; M. J. Heald, assistant division manager; H. N. Pardee, division manager; S. H. Benner, general production superintendent; M. G. Miller, chief clerk, and H. H. Arnold, Jr., chief geologist. Second row: G. L. Pitcher, J. A. Hale, production department; Stanley Donnelly, Osage superintendent; R. M. Langdon, Seminole superintendent; W. E. Gormley; B. M. Miller; A. L. Kraft, Cushing and Bristow superintendent; H. L. Van Deventer, North Kansas superintendent, and W. B. Cooper. Third row: H. C. Moore; E. F. Dale, Healdton superintendent; M. C. Harrell, Kansas superintendent; J. F. Blackwell; C. C. Virgin; H. F. Johnson and L. H. Luckert, geological department, and V. M. Irvin, Bird Creek and Preston superintendent.



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(Forged Steel)

Made in High Hub, Screwed or Slip-on as shown, or Welding Neck Type. 300 lbs. to 2500 lbs. Standards available for immediate shipment from large Houston stocks. Ring type unions can be furnished if desired. Prices furnished upon request.

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MAINTENANCE ENGINEERING CORPORATION

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HOUSTON, TEXAS, U. S. A.

An A.A.P.G. Book (1939)

Recent Marine Sediments

A SYMPOSIUM OF 34 PAPERS BY 31 AUTHORS

Edited by **PARKER D. TRASK**

U. S. Geological Survey, Washington, D. C.

Prepared under the Direction of a Sub-Committee of the Committee of Sedimentation of the Division of Geology and Geography of the National Research Council, Washington, D. C.

Carl W. Correns, Stina Gripenberg, W. C. Krumbein, Ph. H. Kuenen, Otto Pratje, Roger Revelle, F. P. Shepard, H. C. Stetson, Parker D. Trask, Chairman

This book is on the topic of Sedimentation and Environment of Deposition recently voted No. 1 in geological research of most importance to the progress of petroleum geology—in a poll of the 3,000 A.A.P.G. members and associates, conducted by the Research Committee. Throughout the book, the basic data — observational facts — are emphasized rather than speculative inferences.

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THE AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Box 979, Tulsa, Okla., U. S. A.

Squeaks from the Bull Wheel

Cemetery Rymes

Just pause and think of William Fleet;
He didn't look when he crossed the street.

"It ain't too deep," said Johnny Stout;
Two days later they fished him out.

Here lies the body of Tobias Finn;
He took one drink of home-made gin.

"I'll take a chance," said Willie Spates;
Before he entered the pearly gates.

Shed a tear or two for Henry Muck;
He disputed the way with a motor truck.

Conclusions

The young bachelor was asked which he thought were happier, people who were married or people who were not.

"Well, I don't know," he replied, "sometimes I think there is as many as is that ain't, as ain't that is."

Anti Speed Up

"This machine has taken jobs from scores of men. Why don't you junk that machine and put 100 men in that ditch with shovels?"

"Or better still, why not put a thousand men in there with teaspoons!"

Likewise

Conductor—"Next station is Long Wait Junction. Change cars for Mauch Chunk, Squeedunk, Quakake and Podunk, Hokendaqua, Catasaqua, Mecanaqua, and Tamaqua."

Green Brakeman (at other end of car)—"Same at this end."

Post Haste

A small coupe skittered over a curbstone and rammed into the front of a building. Disentangling herself from the wreckage, an excited woman stepped from the car. "I was in a hurry to get to the department store," she explained.

"Lady," said the store manager, "you're in it. What can we do for you?"

Well Qualified

Little six-year-old Bertie was telling his big brother about the nurse who visited his school. "Is she a good looker?" John asked.

"Of course she is. She looks down our throats every week."

Doctor's Orders

"I thought the doctor told you to stop all drinks."

"Well, what of it? You don't see any gettin' past me, do you?"

Holding Their Own

The company was on a 30-mile hike to Houston. After walking for three hours the major halted a farmer and asked him:

"How far is it to Houston?"

"Oh, about 10 miles," replied the rustic.

After walking another hour, the major stopped another farmer and asked him the same thing.

"I should say about 10 miles," was the reply.

The body continued on its weary way for two hours, and then came to a constable.

"How far is it to Houston?"

"About 10 miles."

"By golly," cried the major, "we're holding our own!"

One Purpose Mind

"She was interested in a stove, in fact she wanted to buy a stove, and told the furniture store salesman that is why she was in the store. She listened very patiently and meekly to the sales patter. She heard about non-corroding bolts, and patented insulation material and the gauge of steel used, and tricky controls, and over-size combustion chambers, and all the other things that are so startlingly new in an old lady's world that you'd think they would impress her mightily.

"Finally the salesman paused, and she still waited with patient expectancy.

"'Well, madam, I've told you everything about the stove,' the salesman declared, 'Is there anything else you'd like to know?'

"'Yes,' she answered, 'will it keep an old lady warm?'"

Old Stuff

"Here's a story in the paper which says it has been discovered that singing warms the blood."

"That's nothing new. I've heard lots of singing that's made my blood boil."

Stepping Out

Here, here! What's all the argument about?

That dad-blamed loafer on that steam shovel says we have to call him a chauffeur.

Why Practice?

Squeaks is indebted to C. G. Rosaire for this story as told by Harry Journeay of Subterrex:

A negro chauffeur had been called in the draft. He was pretty sick about it and his boss asked him what he was so down in the mouth about. After being told about the call, the boss said:

"Boy, I wouldn't feel so bad about it. You will get all the food you can eat, a warm, dry place to sleep, plenty of clothes and $30.00 a month to spend and you won't have to work any harder than you used to on the farm."

"I know, boss, but I'm scared of this war business. I don't want any of it."

"Oh, be sensible, we are not going to war against anybody. We're just going to show them a real army so they will know better than start anything with us."

"I don't know, boss, with all this here practice they're bound to be scheduling some games!"

For portable Rigs
where derrick space is at a premium

BREWSTER
offers this COMPACT 60
TRAVELING BLOCK

Here is a traveling block made specifically for portable rigs by portable rig specialists. It is compact and sturdy. Carefully engineered and precision made. The concave top fits the curvature of crown block sheaves thus enabling maximum travel. 26" Manganese-Chromium-Moly steel sheaves have flame hardened API grooves. Double pre-adjusted tapered roller bearings eliminate side sway and reduce bearing wear. One-piece side members reduce the number of parts and distribute load uniformly. 60 tons capacity.

Companion crown blocks are also available.

For description of larger blocks and other Brewster equipment, please refer to pages 397 to 420 in the Composite Catalog or write for latest catalog.

- **COMPACT**
- **MAXIMUM TRAVEL**
- **ROLLER-BEARING SHEAVES**

The BREWSTER COMPANY, Inc.
Shreveport, Louisiana, U.S.A. ***Branches at New Iberia and Houma***

A wide range of consistencies available for any method of application or operating condition.

YEARS of exhaustive research by Gulf's technologists have produced two superior lines of lubricating greases for ball and roller bearings — greases which provide a "second wind" for today's hard pressed equipment.

One, Gulf Anti-Friction Grease, is recommended for heavy duty service. The other, Gulf Precision Grease, is recommended for lighter duty and higher speeds. Both have a high melting point and are specially prepared for greatest resistance to oxidation and separation.

Gulf's newly developed method of compounding, employing special high pressure kettles and mixing methods, produces these greases with a relatively smooth, non-fibrous texture, which gives a true picture of their consistency.

Both of these superior new lubricants are available in a standardized consistency range in line with the National Lubricating Grease Institute consistency recommendations which went into effect March 1, 1941. Write today for complete information.

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3800 Gulf Building, Pittsburgh, Pa.

Please send me without obligation complete information about your new long life greases for anti-friction bearings.

Name.....
Company.....
Address.....

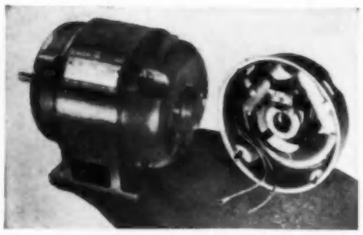
NOTES FOR THE Equipment Buyer and User

Motor

GENERAL ELECTRIC COMPANY

A tri-clad capacitor motor has been announced by General Electric Company, Schnectady, New York.

It may be obtained with either ball-bearing or sleeve-bearing construction, and is available in two types, Type KC and Type KCJ. Type KC is designed



G-E capacitor motor. End shield shows capacitors and transfer switch locations.

particularly for applications requiring moderate starting torques such as fans, blowers, and centrifugal pumps. Type KCJ is designed for compressors, loaded conveyors, reciprocating pumps, and any other applications requiring high starting torque. Capacitors are mounted inside the end shield on the normal-torque motor, while on the high-starting torque motor, 1½-horsepower and larger, capacitors are mounted in a case on top of the motor frame.

In both of its forms, the capacitor motor features mechanical protection through the use of a cast-iron frame, electric protection by use of Formex wire in the magnet coils, and improved bearing design and lubricating arrangements. It also utilizes cast-aluminum rotor and double-end ventilation.

Protected frame and end shields are designed to minimize contact of vital motor parts with foreign material while also protecting it against accidental blows in handling or similar rough usage. New-type insulation, dust-tight bearings, and the use of Glyptal in the priming and finishing paints armor it against the attack of harmful agents.

The transfer switch, transfering the motor from the starting to running connection, consists of a centrifugal mechanism mounted on the rotor shaft, and a stationary switch located in the end shield. As the motor approaches full speed, centrifugal force moves the collar of the rotating mechanism away from the switch by snap action, thus causing the switch to open.

A new pressed-steel conduit box is designed to provide large working space and simplify installation in close quarters. It may be mounted in any one of four positions. Terminals permanently identify the leads. A graphic connection plate of stainless steel shows external connections.

Equipment

Allis-Chalmers Manufacturing Company, Milwaukee, has issued the fourth edition of its "Annual Review," summarizing sales and engineering developments of 1940. In 100 pages and several times that many illustrations, it tells of progress made in various departments, including blower and compressor, crushing-cement-mining, electrical, engine and condenser, feedwater treating, hydraulic, milling machinery, steam turbine, and tractor. An additional chapter relates the part being played by the company in the national defense program.

Valves

Manning, Maxwell & Moore, Inc., Hancock Valve Division, Bridgeport, Connecticut, has issued Bulletin 4-4500-D on its line of Superfinished 500-Brinell-bronze valves. It describes application of the Superfinish operation to manufacture of bronze valves and recently hancodur stems and bonnets used in these valves.

Pumps

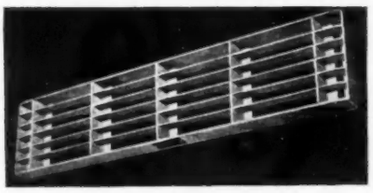
Allis-Chalmers Manufacturing Company, Milwaukee, has issued Leaflet B-6153, on its self-contained engine-driven pumping units for service entirely independent of any outside source of power supply. It includes a centrifugal pump selection table for picking suitable unit, and overall dimensic ı sheet.

Grating

ALUMINUM LADDER COMPANY

A grating made of aluminum alloy 61 ST, with a tensile strength rating of 48,000 pounds, has been announced by Aluminum Ladder Company, Tarentum, Pennsylvania.

The grating is designed for use as steps on metal stairs, drains around



Aluminum Ladder Company's Grating

tanks, and for walks on ships carrying volatile cargoes and in plants where fire hazards exist. It is non-sparking, and all-welded construction is designed to insure against bending and buckling.

Weight of the grating is 2 pounds per square foot, and it is available in all lengths and widths.

Metallizing Gun

METALLIZING ENGINEERING CORPORATION

A metallizing gun, designated Type 2E and designed with a controlled power unit to give uniform and steady wire feed for production service, eliminating need for gear changes, has been announced by Metallizing Engineering Corporation, 21-07 41 Street, Long Island City, New York. A universal gas head allows use of acetylene, propane, hydrogen, natural or manufactured gas with balanced pressures.

The gun is used for restoration of worn machine parts. including bearing surfaces, rolls, shafts, pump rods, press fits, and for repairing defects in castings with carbon steels, stainless steels, bronze, brass, monel metal, nickel and other metals. It may also be used for application of corrosion resistant coatings of zinc, aluminum, lead, tin and other metals to all types of equipment.

In operation, wire is automatically fed into the gun at an adjustable speed, where it is melted by means of concentrated flame, atomized by compressed air and sprayed on any base material. The gun may be used as a hand tool for coating large structures, or as a lathe tool for building up worn shafts, rolls or plungers.

The controlled power unit controls wire speed by means of a governor, operating on the power absorption principle to allow full power input at all times and eliminate speed fluctuations under varying loads and the necessity for changing gears in the gun.

The tool weighs 4¾ pounds. Gear case is of aluminum alloy, completely sealed. Two-piece case construction combined with removable drive gear and roll are designed to make the unit

Get the EXTRA POWER of the New 30 K.V.A. WITTE DIESELECTRIC PLANT

Here's extra power for the oil industry at amazingly low cost! This large 30 K.V.A. WITTE is a masterpiece of quality construction. Gives you the utmost in dependability and low cost operation wherever you set your rig.

Gives you power and light for less than ONE CENT a kilowatt.

Rugged, compact. *OTHER WITTE Diesels*—3 to 30 K.V.A., 4 to 40 H.P. — Vertical or Horizontal. 1, 2 and 4 cylinders. Manual control, electric starting or fully automatic.

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SEE YOUR SUPPLY DEALER

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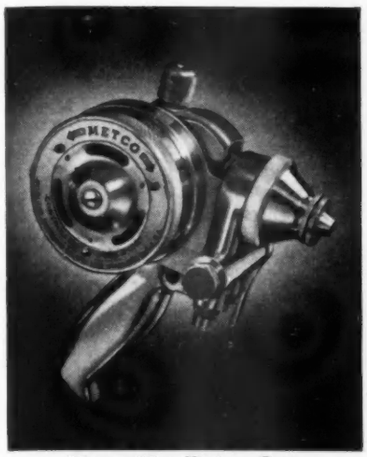


Metco Metallizing Gun

easy to clean and inspect. Ball bearings are used throughout, and bearing housings constructed of brass are mounted in the case. Ports affecting alignment are assembled with dowel pins or cylindrical fits, and alignment is not dependent upon threaded sections. Worms are cut integral with their shafts, and are ground after hardening. Wire nozzles are of bronze with a hardened lining designed not to fuse or stick to the metal being sprayed. Gas head is made of a dense pressure-tight bronze, separated completely from the case assembly to eliminate danger of inflammable gases collecting in the case. Parts are completely interchangeable, and may be assembled without adjustments.

Mine & Smelter Supply Company Named New Gisholt Sales Agent

Gisholt Machine Company of Madison, Wisconsin, has announced the appointment of The Mine and Smelter Supply Company, Denver, Colorado, as their exclusive sales agent in the Rocky Mountain region. Through its Denver office and branch offices in Salt Lake City and El Paso, this new representative will handle the territory consisting of Arizona, Colorado, New Mexico, Utah, Wyoming, Republic of Mexico and portions of Idaho, Kansas, Montana, Nebraska, South Dakota and Texas. The Mine and Smelter Supply Company's representation will cover the complete line of Gisholt turret lathes, automatic lathes and balancing machines.

Ralph N. Brodie Company Moved To Larger Dallas Office

Ralph N. Brodie Company has moved into larger Dallas quarters at 2815 Canton Street. The office is under the direction of J. J. Kropp, district manager.

Variable-Speed Drive

Electric Machinery Manufacturing Company, Minneapolis, Minnesota, has issued a 12-page bulletin on "Magnetic Variable-Speed Drives," presenting principles, characteristics, advantages and constructional forms of magnetic drives. The magnetic drive coupled between motor and load is designed to provide easily controllable, effective variable delivery from boiler draft fans and centrifugal pumps.

Valves

Reed Roller Bit Company, Reed Valve Division, Houston, has issued Catalog 41, giving 80 pages descriptive of its complete line of valves. A preface gives information on engineering, metallurgy and manufacture, and gives detailed specifications of various materials of which the valves are made. Included is engineering data to aid in the selection of a valve to serve a particular service.

Proportioning and Sampling

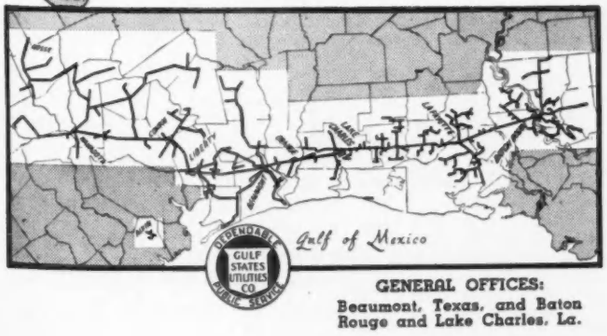
D. W. Haering & Company, 2308 South Winchester Avenue, Chicago, has announced publication of an 8-page bulletin describing the latest developments in proportioning and sampling equipment. Construction, operation and application of the Nelson chemical proportioning pump are discussed. The fluid piston principle, basis of all the company's proportioning and sampling machines, is explained and discussed with reference to design, construction and operation of the machines.

Motors

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pennsylvania, has issued Bulletin 3706.1 describing fan-cooled explosion-resisting motors. It discusses application of large motors in Class 1, Group D hazardous locations; ventilation and explosion resisting principles are explained, and motor parts are described. Frame size and horsepower data for use on 3-phase, 60-cycle lines are given, together with physical dimensions and a section viewing a 32-frame motor.

READY TO SERVE

Plenty of Reserve!



GENERAL OFFICES:
Beaumont, Texas, and Baton Rouge and Lake Charles, La.

WICO AP for Reliable Pumping Engine Ignition

THE TYPE AP Magneto is available for 1, 2, 3, 4, or 6-cylinder engines. Designed especially for gas engines used in oil field work—adequate balance between ventilation, spark output, moisture resistance. Other features are: fool proof impulse coupling, breaker on cam shaft, easy accessibility for repairs and parts replacement. Backed by over 40 years of experience in oil field ignition.

There is WICO authorized service everywhere

WICO ELECTRIC CO.
SPRINGFIELD MASSACHUSETTS

Letters to the Editor

Federal Control

DEAR SIR:

I have read with interest the editorial "The Effect of Federal Control on Oil Company Employes" which appeared in the March 10 issue of THE OIL WEEKLY. It is a timely and thought-provoking editorial, and I wish to commend you for this as well as your recent article, "Analyzing the Latest Attempt At Federal Control," appearing in the current issue.

H. C. WIESS,
President.
Humble Oil & Refining Company,
Houston, Texas.

DEAR SIR:

I wish to commend your paper, especially the issue of March 24, for the way it is endeavoring to give a true light upon the issue of federal control of the oil industry. Being just a roustabout on an isolated lease, it is a pleasure to read THE OIL WEEKLY.

GERALD JOYCE.
Hamilton, Colorado

DEAR SIR:

Please accept my heartiest congratulations on your article on Federal Control of the Oil Industry in the March 24 issue. You have more confidence in our American Democracy than I have. You still seem to think that the wishes of the private business man in this nation still have some influence. . . . More power to you but you may as well save your time and energy. The case is hopeless.

FRANK FROHNHOEFER,
Oil Producer-Marketer.
Corpus Christi, Texas.

DEAR SIR:

I want to congratulate you on your article in the March 24th issue of THE OIL WEEKLY, entitled "Analyzing The Latest Attempt at Federal Control."

I admire the way you call a spade a spade and do not pull your punches. I only wish there were more editors with your courage.

DANA HOGAN.
San Joaquin Valley
Oil Producers Association,
Bakersfield, California.

Chemical Treating

DEAR SIR:

I was greatly interested in the article published in the March 24, 1941, issue of THE OIL WEEKLY, entitled "Economics of Chemical Treating Crude Oil Emulsions," by Charles Hetherington, Leonard Battle, Paul Haskett and R. L. Huntington.

The article deserves much credit in contributing to our knowledge of crude-oil treating. The authors have presented simple and clear methods of comparing the functions of treating temperature, quantity of chemical and gravity loss in determining the maximum profit per barrel.

However, I wish to point out an error in labeling curves on the graph, Figure 1. The Heating Cost Curve was erroneously named Soap Cost, and vice versa.

Also, I wish to comment on the authors' discussion of the gravity of treated crude. It appears that their calculations are based on an immediate sale of the crude after being treated, or else no provisions are made for further gravity loss while the oil is stored in stock tanks. The gravity of the oil when sold is dependent on the length of time the oil has been stored, atmospheric temperature and pressure, surface area, etc. In applying the calculations as presented in this article to actual field problems, it would perhaps be wise to consider the average length of time the crude is in storage. Specifically, there are cases where the same ultimate gravity will be obtained, whether or not the oil is heated to 100 or 150 degrees, as an example. In such a case, less chemical and more heat could be applied without a loss in profit.

However, the data as given in the article offer an excellent method of approximating the most economical method of treating crude, which can be supplemented by slight deviations to suit the particular field problem.

RALPH L. GRAY.
Stanolind Oil and Gas Company,
Hobbs, New Mexico.

Strikes

DEAR SIR:

Allow me to commend you for your article in March 24 issue on "Unnecessary Strikes." We have plenty of them in this industrial state. I was an eye-witness to the sad spectacle in 1937 when automobile strikers took over all of Lansing and ran off the police, but more than met their match when they attempted to take over East Lansing, three miles east, just at an hour when 5500 boys and girls were pouring out of Michigan State College. In the meantime, Governor Murphy was at the central state police post, not one mile away, horseback riding—not fishing.

As an oil producer since 1909 I must also commend Mr. Dudley on his fine article on Federal Control. I have attended all the meetings in Fort Worth, Dallas and Tulsa on this subject, and the forcefulness and logic of this article is seldom approached.

On this subject of control, don't you think The Texas Company is getting out some nice good will on their "commercial" talks on the Fred Allen program? This company gets a lot of h—— from the independent producers of Texas, but give everyone his just due, and if the rest of us could set out the position of the industry as nicely as this program, we would have a lot of backing in what we know is right.

A. J. WEIDEMAN.
Mt. Pleasant, Michigan.

Oklahoma Engineers Issue New Monthly Publication

"Sooner Shamrock" is the name of a new publication issued by the College of Engineering, University of Oklahoma, which made its bow on March 17. It is a very attractive magazine with an editorial staff consisting of Claude Gordon, Jr., editor; Sam C. Holland, faculty advisor; George McDannold, business manager; Harper Thomas, personnel manager; James Stockman, associate editor; Ernest V. Cameron, assistant editor, and Ted Findeiss, John Jacobs, Arch McDonald, Jim Crawford, Gene Kennedy, Joe Amspacher, C. W. Webb, Robert Cocanower and R. T. Foor, department editors. In addition to the foregoing, the March issue showed a staff of thirty-eight men.

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